

Report Number: 208-TRC-03-001

Safety Compliance Testing for FMVSS 208

Occupant Crash Protection

General Motors Corporation

2003 Chevrolet Suburban

NHTSA Number: C30104

TRC Inc. Test Number: 021114

Transportation Research Center Inc.

10820 State Route 347

East Liberty, OH 43319



Report Date: Dec. 19, 2002

Final Report

Prepared For:

U. S. Department of Transportation

National Highway Traffic Safety Administration

Safety Assurance

Office of Vehicle Safety Compliance (NVS-220)

400 Seventh Street, S.W., Room No. 6115

Washington, DC 20590

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Test Performed By: Mike Postle, Engineering Technician

Report Approved By:



Virginia L. Walters, Project Manager
Transportation Research Center Inc.

Date 12/16/02

Final Report Acceptance By OVSC:

Date _____
Contracting Officer's Technical Representative (COTR),
NHTSA, Office of Vehicle Safety Compliance

1. Report No. 208-TRC-03-001	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Final Report of FMVSS 208 Compliance Testing of a 2003 Chevrolet Suburban NHTSA No. C30104		5. Report Date Dec. 16, 2002	
		6. Performing Organization Code TRC	
7. Author(s) Virginia L. Watters, Project Manager Transportation Research Center Inc.		8. Performing Organization Report No. 021114	
9. Performing Organization Name and Address Transportation Research Center Inc. 10820 State Route 347 East Liberty, OH 43319		10. Work Unit No.	
		11. Contract or Grant No. DTNH22-02-D-08062 T.O. VRTC-DCH2525	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Safety Assurance Office of Vehicle Safety Compliance (NVS-220) 400 Seventh Street, S.W., Room 5115 Washington, DC 20590		13. Type of Report and Period Covered Final Report November - December 2002	
		14. Sponsoring Agency Code NVS-220	
15. Supplemental Notes None			
16. Abstract Compliance tests were conducted on a 2003 Chevrolet Suburban, NHTSA No. 30104, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP208-11 for the determination of FMVSS 208 compliance. Possible test failures identified were as follows: None			
17. Key Words Compliance Testing Safety Engineering FMVSS 208		18. Distribution Statement Copies of this report are available from: NHTSA Technical Information Services (TIS) NPO-230 400 Seventh Street, S.W., Room 5108 Washington, DC 20590 Telephone: 202-366-4946	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. Number of Pages 295	22. Price

Table of Contents

<u>Section</u>	<u>Description</u>	<u>Page</u>
Section 1	Purpose of Compliance Test	1-1
Section 2	Tests Performed	2-1
Section 3	Injury Result Summary	3-1
Section 4	Discussion of Test	4-1
Section 5	Test Data Sheets	5-1
Section 6	Test Data	6-1
Section 7	Photographs	7-1
Appendix A	Test Equipment List and Calibration Information	A-1

List of Data Sheets

<u>Number</u>	<u>Description</u>	<u>Page</u>
1	COIR Work Order	5-2
2	Report of Vehicle Condition	5-6
3	Certification Label and Tire Placard Information	5-8
4	Rear Outboard Seating Position Seat Belts	5-9
5	Air Bag Labels	5-10
6	FMVSS 208 Readiness Indicator	5-19
7	Passenger Manual Cut-Off Device	5-20
8	Lap Belt Lockability	5-23
9	FMVSS 208 Seat Belt Warning System Check (S7.3)	5-44
10	Belt Contact Force (S7.4.3)	5-46
11	Latchplate Access (S7.4.4)	5-62
12	Seat Belt Retraction (S7.4.5)	5-70
13	Seat Belt Guides and Hardware (S7.4.6)	5-76
26	Vehicle Weight, Fuel Tank and Attitude Data	5-85
27	Vehicle Accelerometer Locations	5-89
28	Photographic Targets	5-92
29	Camera Locations	5-98
30	Dummy Positioning Procedures for Test Dummy Conforming to Subpart O of Part 572	5-100
31	Dummy Positional Measurements	5-111
32	Crash Test	5-117
33	Offset Deformable Barrier Test Using Belted 5 th Percentile Female Dummies (Part 572, Subpart O) (S18)	5-118
34	Accident Investigation Measurements	5-128
35	Windshield Mounting (FMVSS 212)	5-130
36	Windshield Zone Intrusion (FMVSS 219)	5-132
37	Fuel System Integrity (FMVSS 301)	5-134

Section 1

Purpose of Compliance Test

PURPOSE

This Federal Motor Vehicle Safety Standard 208 compliance test is part of a program conducted for the National Highway Traffic Safety Administration by Transportation research Center (TRC Inc.) under contract D1NH22-02-D-08062, Task Order VRTC-DCF2525. The purpose of the test was to determine whether the subject vehicle, a 2003 Chevrolet Suburban, NHTSA No. C30104, meets certain performance requirements of FMVSS 208, "Occupant Crash Protection"; indicant FMVSS 212, "Windshield Mounting"; indicant FMVSS 219, "Windshield Zone Intrusion"; and indicant FMVSS 301, "Fuel System Integrity". The compliance test was conducted in accordance with OVSC Laboratory Test Procedure No. TP-208-11 dated August 22, 2002.

Section 2

Tests Performed

TESTS PERFORMED

The following checked items indicate the tests that were performed:

- ☒ 1. Rear outboard seating position seat belts (S4.1.4.2(b) & (S4.2.4)
- ☒ 2. Air bag labels (S4.5.1)
- ☒ 3. Readiness indicator (S4.5.2)
- ☒ 4. Passenger Air Bag Manual Cut-Off Device (S4.5.4)
- ☒ 5. Lap belt lockability (S7.1.1.5)
- ☒ 6. Seat belt warning system (S7.3)
- ☒ 7. Seat belt contact force (S7.4.3)
- ☒ 8. Seat belt latch plate access (S7.4.4)
- ☒ 9. Seat belt retraction (S7.4.5)
- ☒ 10. Seat belt guides and hardware (S7.4.6)
- ☐ 11. Suppression tests with 12-month-old CRABI dummy (Part 572, Subpart N)
- ☐ 12. Suppression tests with Newborn infant Subpart K dummy (Part 572, Subpart N)
- ☐ 13. Suppression tests with 3-year-old dummy (Part 572, Subpart P)
- ☐ 14. Suppression tests with 6-year-old dummy (Part 572, Subpart R)
- ☐ 15. Test of Reactivation of the passenger Air Bag system with an Unbelted 5th Percentile female dummy
- ☐ 16. Low risk deployment test with 12-month-old dummy (Part 572, Subpart N)
- ☐ 17. Low risk deployment test with 3-year-old dummy (Part 572, Subpart P)
- ☐ 18. Low risk deployment test with 6-year-old dummy (Part 572, Subpart R)
- ☐ 19. Low risk deployment test with 5th female dummy (Part 572, Subpart O)
- ☒ 20. Impact tests
 - ☐ Frontal Oblique
 - ☐ Belted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.1.(a))
 - ☐ Unbelted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))
 - ☐ Unbelted 50th male dummy driver and passenger (32 to 40 km/h) (S5.1.2(a)(1) or S5.1.2(b))
 - ☐ Frontal 0°
 - ☐ Belted 50th male dummy driver (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
 - ☐ Belted 50th male dummy passenger (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
 - ☐ Belted 5th female dummy driver (0 to 48 km/h) (S16.1(a))
 - ☐ Belted 5th female dummy passenger (0 to 48 km/h) (S16.1(a))
 - ☐ Belted 50th male dummy driver and passenger (0 to 56 km/h) (S5.1.1(b)(2))
 - ☐ Unbelted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))
 - ☐ Unbelted 50th male dummy driver (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
 - ☐ Unbelted 50th male dummy passenger (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
 - ☐ Unbelted 5th female dummy driver (32 to 40 km/h) (S16.1(b))
 - ☐ Unbelted 5th female dummy passenger (32 to 40 km/h) (S16.1(b))
- ☒ 40% Offset 0° Belted 5th female dummy driver and passenger (0 to 40 km/h) (S18.1)
- ☐ 21. Sled test: Unbelted 50th male dummy driver and passenger (S13)

- 22. FMVSS 204 indicant test
- X 23. FMVSS 212 test (indicant)
- X 24. FMVSS 219 indicant test
- X 25. FMVSS 301 frontal test (indicant)

For the crash tests, the vehicle was instrumented with 8 accelerometers. The accelerometer data from the vehicle and dummies were sampled at 12,500 samples per second and processed as specified in SAE J211/1 MAR95 and FMVSS 208, S4.13.

The dynamic tests were recorded using high speed film and digital motion picture cameras.

The vehicle appears to meet the performance requirements to which it was tested.

Section 3

Injury Result Summary

INJURY RESULT SUMMARY FOR CRASH TESTS AND/OR LOW RISK DEPLOYMENT TESTS

NHTSA No.: C30104

Test Date: 11/14/02

VIN: 3GNEC16Z53G108730

Frontal Crash ☐ Offset Crash ☒ Low Risk Deployment ☐

Impact Angle: 0

Belted Dummies: ☒ Yes ☐ No

Speed Range: ☐ 32 to 40 km/h ☒ 0 to 40 km/h ☐ 0 to 48 km/h ☐ 0 to 56 km/h

Test Speed: 40.0 km/h

Driver Dummy: ☒ 5th female ☐ 50th male

Passenger Dummy: ☒ 5th female ☐ 50th male

Test weight: 2684.3 kg

5th Percentile Female Offset Crash Test
Vehicles certified to S16.1(a), S16.1(b), or S18.1

Injury Criteria	Max. Allowable Injury Assessment Values	Driver	Passenger
HIC15	700	262	290
N _{te}	1.0	0.40	0.35
N _{fr}	1.0	0.08	0.28
N _{ce}	1.0	0.02	0.03
N _{er}	1.0	0.10	0.28
Neck tension	2620 N	782	1059
Neck compression	2520 N	140	55
Chest g	60 g	20.2	22.8
Chest displacement	52 mm	20	13
Left femur	6805 N	3320	1398
Right femur	6805 N	1241	1244

Section 4

Discussion of Test

DISCUSSION OF TEST

The airbags did not deploy in this test. The dummies were restrained with seatbelts.

The useable fuel tank capacity provided by the manufacturer to the Office of Vehicle Safety Compliance (32.5 gallons) did not agree with the fuel tank capacity provided in the owner's manual (31.0 gallons or 117.3 liters). Following instructions from the COTR, the owner's manual stated capacity of 117.3 liters was used in test weight calculations and was used in determining the amount of Stoddard to put into the fuel tank to test at the 94% full level. [TRC Inc. used the method of topping off the fuel (gasoline) for determining the fully loaded weight and then drained all the fuel and filled the fuel tank to 94 percent capacity with Stoddard solvent.]

The vehicle test weight was 15.0 kg above the maximum of the test weight corridor as shown in this report. The test weight had been recalculated on test day, with COTR approval, using Rated Cargo and Luggage Weight (RCLW) of 136 kg instead of the calculated RCLW of 100.5 kg. Thus the test weight was thought to be within the corridor on test day.

The left front and right rear vehicle pre-test attitudes did not fall between the measured attitudes for the delivered and fully loaded conditions. Deviation was 10 mm or less.

The deformable barrier face was attached to an offset rigid load cell barrier designed and owned by NHTSA's Vehicle Research and Test Center. The barrier face was mounted with the specified steel strips and 10 bolts as specified, although the 5 bolts on top and bottom were not evenly spaced.

The rear pit camera (fuel tank view) had no LFD's for determination of film speed.

Section 5

Test Data Sheets

DATA SHEET 1 **COTR Vehicle Work Order**

Vehicle model year, make, and model: 2003 Chevrolet Suburban

NHTSA No.: C30104 Test Date: 11/14/02

COTR signature: Charles R. Case

Tests to be performed for this vehicle are checked below.

- ☒ 1. Rear outboard seating position seat belts (S4.1.4.2(b) & (S4.2.4)
- ☒ 2. Air bag labels (S4.5.1)
- ☒ 3. Readiness indicator (S4.5.2)
- ☒ 4. Passenger air bag manual cut-off device (S4.5.4)
- ☒ 5. Lap belt lockability (S7.1.1.5)
- ☒ 6. Seat belt warning system (S7.3)
- ☒ 7. Seat belt contact force (S7.4.3)
- ☒ 8. Seat belt latch plate access (S7.4.4)
- ☒ 9. Seat belt retraction (S7.4.5)
- ☒ 10. Seat belt guides and hardware (S7.4.6)
- ☐ 11. Suppression tests with 12-month-old CRABI dummy (Part 572, Subpart K) using the following indicated child restraints.

Section A

☐ Cosco Dream Ride 02-719 ☐ Full rearward ☐ Mid position ☐ Full forward

Section B

☐ Britax Handle with Care 191 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century Assura 4553 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century Avanti SE 41530 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century Smart Fit 4543 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Cosco Ariva 02727 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Cosco Opus 35 02-603 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo Discovery Adjust Right 212 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo First Choice 204 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo On My Way Position Right V 282 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Graco Infant 8457 ☐ Full rearward ☐ Mid position ☐ Full forward

Section C

☐ Britax Roundabout 161 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century Encore 4612 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century STE 1000 4416 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Cosco Olympian 02803 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Cosco Touriva 02519 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo Horizon V 425 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo Medallion 254 ☐ Full rearward ☐ Mid position ☐ Full forward

- ☐ 12. Suppression tests with 3 year-old dummy (Part 572, Subpart P) using the following indicated child restraints where a child restraint is required.

Section C

☐ Britax Roundabout 161 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century Encore 4612 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century STE 1000 4416 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Cosco Olympian 02803 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Cosco Touriva 02519 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo Horizon V 425 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Evenflo Medallion 254 ☐ Full rearward ☐ Mid position ☐ Full forward

Section D

☐ Britax Roadster 9004 ☐ Full rearward ☐ Mid position ☐ Full forward

☐ Century Next Step 4920 ☐ Full rearward ☐ Mid position ☐ Full forward

- | | | | | | | | |
|-------|--------------------------------|-------|---------------|-------|--------------|-------|--------------|
| _____ | Cosco High Back Booster 02-442 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Evenflo Right Fit 245 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
13. Suppression tests with Representative 3-year-old child using the following indicated child restraints where a child restraint is required. (Laboratory Test Procedure Appendix H, Data Sheet 16H and 17H)
- Section C
- | | | | | | | | |
|-------|-----------------------|-------|---------------|-------|--------------|-------|--------------|
| _____ | Britax Roundabout 161 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Century Encore 4612 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Century STE 1000 4416 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Cosco Olympian 02803 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Cosco Touriva 02519 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Evenflo Horizon V 425 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Evenflo Medallion 254 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
- Section D
- | | | | | | | | |
|-------|--------------------------------|-------|---------------|-------|--------------|-------|--------------|
| _____ | Britax Roadster 9004 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Century Next Step 4920 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Cosco High Back Booster 02-442 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Evenflo Right Fit 245 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
14. Suppression tests with 3-year-old dummy (Part 572, Subpart P) in the following positions
- _____ Sitting on seat with back against seat back (S22.2.2.1)
 - _____ Sitting on seat with back against reclined seat back (S22.2.2.2)
 - _____ Sitting on seat with back not against seat back (S22.2.2.3)
 - _____ Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)
 - _____ Standing on seat, facing forward (S22.2.2.5)
 - _____ Kneeling on seat facing forward (S22.2.2.6)
 - _____ Kneeling on seat facing rearward (S22.2.2.7)
 - _____ Lying on seat (S22.2.2.8)
15. Suppression tests with representative 3-year-old child in the following positions
- _____ Sitting on seat with back against seat back (S22.2.2.1)
 - _____ Sitting on seat with back against reclined seat back (S22.2.2.2)
 - _____ Sitting on seat with back not against seat back (S22.2.2.3)
 - _____ Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)
 - _____ Standing on seat, facing forward (S22.2.2.5)
 - _____ Kneeling on seat facing forward (S22.2.2.6)
 - _____ Kneeling on seat facing rearward (S22.2.2.7)
 - _____ Lying on seat (S22.2.2.8)
16. Suppression tests with 6-year-old dummy (Part 572, Subpart N) using the following indicated child restraints where a child restraint is required.
- Section D
- | | | | | | | | |
|-------|--------------------------------|-------|---------------|-------|--------------|-------|--------------|
| _____ | Britax Roadster 9004 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Century Next Step 4920 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Cosco High Back Booster 02-442 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Evenflo Right Fit 245 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
17. Suppression tests with representative 6-year-old child using the following indicated child restraints where a child restraint is required.
- Section D
- | | | | | | | | |
|-------|--------------------------------|-------|---------------|-------|--------------|-------|--------------|
| _____ | Britax Roadster 9004 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Century Next Step 4920 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Cosco High Back Booster 02-442 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
| _____ | Evenflo Right Fit 245 | _____ | Full rearward | _____ | Mid position | _____ | Full forward |
18. Suppression tests with 6-year-old dummy (Part 572, Subpart N) in the following positions
- _____ Sitting on seat with back against seat back (S22.2.2.1)
 - _____ Sitting on seat with back against reclined seat back (S22.2.2.2)
 - _____ Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)
 - _____ Sitting back in the seat and leaning on the right front passenger door (S24.2.3)

19. Suppression tests with representative 6-year-old child in the following positions
- ___ Sitting on seat with back against seat back (S22.2.2.1)
 - ___ Sitting on seat with back against reclined seat back (S22.2.2.2)
 - ___ Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)
 - ___ Sitting back in the seat and leaning on the right front passenger door (S24.3.3)
20. Low risk deployment test with 12-month-old dummy (Part 572, Subpart R) using the following indicated child restraints.
- Section B
- | | | | |
|--|-------------------|------------------|------------------|
| ___ Britax Handle with Care 191 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Century Assura 4553 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Century Avanto SE 41530 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Century Smart Fit 4543 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Cosco Arriva 02727 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Cosco Opus 35 02603 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Evenflo Discovery Adjust Right 212 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Evenflo First Choice 204 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Evenflo On My Way Position Right V 282 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Graco Infant 8457 | ___ Full rearward | ___ Mid position | ___ Full forward |
- Section C
- | | | | |
|---------------------------|-------------------|------------------|------------------|
| ___ Britax Roundabout 161 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Century Encore 4612 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Century STE 1000 4416 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Cosco Olympian 02803 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Cosco Touriva 07519 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Evenflo Horizon V 425 | ___ Full rearward | ___ Mid position | ___ Full forward |
| ___ Evenflo Medallion 254 | ___ Full rearward | ___ Mid position | ___ Full forward |
21. Test of Reactivation of the Passenger Air Bag System with an Unbelted 5th Percentile Female Dummy (S20.3, 22.3, S24.3) Perform this test after the following suppression test(s): _____
22. Test of Reactivation of the Passenger Air Bag System with a representative 5th Percentile Female (S20.3, 22.3, S24.3) Perform this test after the following suppression test(s): _____
23. Low risk deployment test with 3-year-old dummy (Part 572, Subpart P) in the following positions
- ___ Position 1
 - ___ Position 2
24. Low risk deployment test with 6-year-old dummy (Part 572, Subpart N) in the following positions
- ___ Position 1
 - ___ Position 2
25. Low risk deployment test with 5th female dummy (Part 572, Subpart O) in the following positions
- ___ Position 1
 - ___ Position 2
- X 26. Impact tests
- | ___ Frontal Oblique | Test Speed |
|--|------------|
| ___ Belted 50th male dummy driver and passenger ((0 to 48 km/h) (S5.1.1(a)) | |
| ___ Unbelted 50th male dummy driver and passenger ((0 to 48 km/h) (S5.1.2(a)(1)) | |
| ___ Unbelted 50th male dummy driver and passenger ((32 to 40 km/h) (S5.1.2(a)(1) or S5.1.2(b)) | |
| ___ Frontal 0° | Test Speed |
| ___ Belted 50th male dummy driver ((0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a)) | |
| ___ Belted 50th male dummy passenger ((0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a)) | |
| ___ Belted 5th female dummy driver ((0 to 48 km/h) (S16.1(a)) | |
| ___ Belted 5th female dummy passenger ((0 to 48 km/h) (S16.1(a)) | |
| ___ Belted 50th male dummy driver and passenger ((0 to 56 km/h) (S5.1.1(b)(2)) | |
| ___ Unbelted 50th male dummy driver and passenger ((0 to 48 km/h) (S5.1.2(a)(1)) | |

- ___ Unbelted 50th male dummy driver (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
 - ___ Unbelted 50th male dummy passenger (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
 - ___ Unbelted 5th female dummy driver (32 to 40 km/h) (S16.1(b))
 - ___ Unbelted 5th female dummy passenger (32 to 40 km/h) (S16.1(b))
 - X 40% Offset 0° Belted 5th female dummy driver and passenger (0 to 40 km/h) (S18.1)
- Test Speed 40 km/h see test procedure for speed tolerance
- ___ 27. Sled test: Unbelted 50th male dummy driver and passenger (S15)
 - ___ 28. FMVSS 204 indicant test
 - X 29. FMVSS 212 test (indicant)
 - X 30. FMVSS 219 indicant test
 - X 31. FMVSS 301 frontal test (indicant)

DATA SHEET 2

Page 1 of 2

REPORT OF VEHICLE CONDITION

CONTRACT NO. DTNH22-D-08062 Date: 11/14/02
 FROM: Transportation Research Center, Virginia L. Watters
Lab & rep name
 TO: Charles R. Case OVSC, NSA-31
COTR Name
 PURPOSE: () Initial Receipt () Received via Transfer (X) Present vehicle condition
 MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Suburban/MPV
 MANUFACTURE DATE: 08/02 NHTSA NO.: C30104 BODY COLOR: Tan
 VIN: 3GNEC16Z53G108730 GVWR 3175 GAWR (Fr) 1425 GAWR (Rr) 1814
 ODOMETER READINGS: ARRIVAL 70 miles DATE 11/12/02
 COMPLETION 70 miles DATE 11/14/02
 PURCHASE PRICE: \$ N/A DEALER'S NAME: N/A

- A. All options listed on "window sticker" are present on the test vehicle.
☒ Yes ☐ No
- B. Tires and wheel rims are new and the same as listed.
☒ Yes ☐ No
- C. There are no dents or other interior or exterior flaws.
☒ Yes ☐ No
- D. The vehicle has been properly prepared and is in running condition.
☒ Yes ☐ No
- E. Keyless remote is available and working.
☐ Yes ☒ No
- F. The glove box contains an owner's manual, warranty document, consumer information, and extra set of keys.
☐ Yes ☒ No
- G. Proper fuel filler cap is supplied on the test vehicle.
☒ Yes ☐ No
- H. Using permanent marker, identify vehicle with NHTSA number and FMVSS test type(s) on roof line above driver door or for school buses, place a placard with NHTSA number inside the windshield and to the exterior front and rear side of bus.
☒ Yes ☐ No
- I. Place vehicle in storage area.
☒ Yes ☐ No
- J. Inspect the vehicle's interior and exterior, including all windows, seats, doors, etc., to confirm that each system is complete and functional per the manufacturer's specifications. Any damage, misadjustment, or other unusual condition that could influence the test program or test results shall be recorded. Report any abnormal condition to the NHTSA COTR before beginning any test.
☐ Vehicle OK ☒ Conditions reported below in comment section

Identify the letter above to which any of the following comments apply.

Comments: Scratch on hood when received. No extra set of keys available.

DATA SHEET 2

Page 2 of 2

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

LIST OF FMVSS TESTS PERFORMED BY THIS LAB:

208 plus indicant: 212, 219, 301

MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Suburban/MPV

NHTSA NO. C30104

REMARKS: _____

Equipment that is no longer on the test vehicle as noted on previous page: None

Explanation for equipment removal: The owner's manual was removed to store with project file.

Test Vehicle Condition: In a frontal impact, the vehicle sustained significant front end and unknown structural damage.

RECORDED BY: Don Ledley
DATE: 11/22/02

APPROVED BY: Virginia Watters
DATE: 12/09/02

#####

RELEASE OF TEST VEHICLE

The vehicle described above is released from TRC Inc. to be delivered to _____
(Laboratory) (Laboratory)

Date: _____ Time: _____ Odometer: _____

Lab Representative: _____
Signature Title

Carrier/Customer Representative: _____
Signature Date

DATA SHEET 3
Certification Label and Tire Placard Information

NHTSA No.: C30104

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): Don Ledley

1. **Certification Label**

Manufacturer General Motors Corporation

Date of Manufacture 08/02

VIN 3GNEC16Z53G108703

Vehicle certified as: Passenger car ☒ MPV ☐ Truck ☐ Bus

Front axle GVWR 1452 kg/3200 lbs.

Rear axle GVWR 1814 kg/4000 lbs.

Total GVWR 3175 kg/7000 lbs.

2. **Tire Placard**

 N/A – Vehicle is not a passenger car and does not have a tire placard.

☒ This is not a passenger car (see the item 1 above), but all or part of this information is still contained on a vehicle label and is reported here.

Vehicle Capacity Weight N/A¹

Designated seating capacity front N/A¹

Designated seating capacity rear N/A¹

Total Designated seating capacity N/A¹

Recommended cold tire inflation pressure front 240 kPa/35 psi

Recommended cold tire inflation pressure rear 240 kPa/35 psi

Recommended tire size P265/70R16

¹ Label did not contain this information.

DATA SHEET 4
REAR OUTBOARD SEATING POSITION SEAT BELTS

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): Don Ledley

Do all rear outboard seating positions have type 2 seat belts? Yes X; No _____

If NO, describe the seat belt installed, the seat location, and any other information about the seat that would explain why a type 2 seat belt was not installed.

REMARKS:

DATA SHEET 5
AIR BAG LABELS (S4.5.1)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

1. Air Bag Maintenance Label and Owner's Manual Instructions: (S4.5.1(a))
 - 1.1 Does the manufacturer recommend periodic maintenance or replacement of the air bag?
 Yes (Go to 1.2); X No (Go to 2)
 - 1.2 Does the vehicle have a label specifying air bag maintenance or replacement?
 Yes-Pass; No-FAIL
 - 1.3 Does the label contain one of the following?
 Yes-Pass; No-FAIL
Check applicable schedule
 Schedule on label specifies month and year (Record date)
 Schedule on label specifies vehicle mileage (Record mileage)
 Schedule on label specifies interval measured from date on certification label
(Record interval)
 - 1.4 Is the label permanently affixed within the passenger compartment such that it cannot be removed without destroying or defacing the label or the survivor?
 Yes-Pass; No-FAIL
 - 1.5 Is the label lettered in English?
 Yes-Pass; No-FAIL
 - 1.6 Is the label in block capitals and numerals?
 Yes-Pass; No-FAIL
 - 1.7 Are the letters and numerals at least 3/32 inches high?
 height of letters and numerals
 Yes-Pass; No-FAIL
 - 1.8 Does the owner's manual set forth the recommended schedule for maintenance or replacement? Yes-Pass; No-FAIL
2. Does the owner's manual: (S4.5.1(f))
 - 2.1 Include a description of the vehicle's air bag system in an easily understandable format?
 X Yes-Pass; No-FAIL
 - 2.2 Include a statement that the vehicle is equipped with an air bag and a lap/shoulder belt at the front outboard seating positions?
 X Yes-Pass; No-FAIL
 - 2.3 Include a statement that the air bag is a supplemental restraint at the front outboard seating positions?
 X Yes-Pass; No-FAIL
 - 2.4 Emphasize that all occupants, including the driver, should always wear their seat belts whether or not an air bag is also provided at their seating positions to minimize the risk of severe injury or death in the event of a crash?
 X Yes-Pass; No-FAIL
 - 2.5 Provide any necessary precautions regarding the proper positioning of occupants, including children, at seating positions equipped with air bags to ensure maximum safety protection for those occupants?
 X Yes-Pass; No-FAIL
 - 2.6 Explain that no objects should be placed over or near the air bag on the steering wheel or on the instrument panel, because any such objects could cause harm if the vehicle is in a crash severe enough to cause the air bag to inflate?
 X Yes-Pass; No-FAIL

- 2.7 Is the vehicle certified to meet the requirements of S14.5, S15, S17, S19, S21, S23, and S25? (Obtain the answer to this question from the COTR.) (S4.5.1(f)(2))
☒ Yes (go to 2.7.1); ☐ No (go to 3)
- 2.7.1 Explain the proper functioning of the advanced air bag system? (S4.5.1(f)(2))
☒ Yes-Pass; ☐ No-FAIL
- 2.7.2 Provide a summary of the actions that may affect the proper functioning of the system? (S4.5.1(f)(2))
☒ Yes-Pass; ☐ No-FAIL
- 2.7.3 Present and explain the main components of the advanced passenger air bag system? (S4.5.1(f)(2)(i))
☒ Yes-Pass; ☐ No-FAIL
- 2.7.4 Explain how the components function together as part of the advanced passenger air bag system? (S4.5.1(f)(2)(ii))
☒ Yes-Pass; ☐ No-FAIL
- 2.7.5 Contain the basic requirements for proper operation, including an explanation of the actions that may affect the proper functioning of the system? (S4.5.1(f)(2)(iii))
☒ Yes-Pass; ☐ No-FAIL
- 2.7.6 Is the vehicle certified to the requirements of S19.2, S21.2 or S23.2?
☒ Yes, continue with 2.7.6
☐ No, go to 2.7.7
- 2.7.6.1 Contain a complete description of the passenger air bag suppression system installed in the vehicle, including a discussion of any suppression zone? (S4.5.1(f)(2)(iv))
☒ Yes-Pass; ☐ No-FAIL
- 2.7.6.2 Discuss the telltale light, specifying its location in the vehicle and explaining when the light is illuminated?
☒ Yes-Pass; ☐ No-FAIL
- 2.7.7 Explain the interaction of the advanced passenger air bag system with other vehicle components, such as seat belts, seats or other components? (S4.5.1(f)(2)(v))
☒ Yes-Pass; ☐ No-FAIL
- 2.7.8 Summarize the expected outcomes when child restraint systems, children and small teenagers or adults are both properly and improperly positioned in the passenger seat, including cautionary advice against improper placement of child restraint systems? (S4.5.1(f)(2)(vi))
☒ Yes-Pass; ☐ No-FAIL
- 2.7.9 Provide information on how to contact the vehicle manufacturer concerning modifications for persons with disabilities that may affect the advanced air bag system? (S4.5.1(f)(2)(vii))
☒ Yes-Pass; ☐ No-FAIL
3. Sun Visor Air Bag Warning Label (S4.5.1 (b))
- 3.1 Is the vehicle certified to meet the requirements of S19, S21, and S23? (Obtain the answer to this question from the COTR.) (S4.5.1(b)(2))
☒ Yes (go to 3.1.1 and skip 3.2; ☐ No (go to 3.2, skipping 3.1.1 through 3.1.6)
- 3.1.1 Is the label permanently affixed (including permanent marking on the visor material or molding into the visor material) to either side of the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing the label or the sun visor? (S4.5.1 (b)(2))
 Driver side ☒ Yes-Pass ☐ No-FAIL
 Passenger side ☒ Yes-Pass ☐ No-FAIL
- 3.1.2 Does the label conform in content (vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children." (S4.5.1(b)(2)(v))) to the label shown in Figure 8 at each front outboard seating position? (S4.5.1(b)(2))
 Driver side ☒ Yes-Pass ☐ No-FAIL
 Passenger side ☒ Yes-Pass ☐ No-FAIL

- 3.1.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (b)(2)(i))
 Driver side X Yes-Pass **No-FAIL**
 Passenger side X Yes-Pass **No-FAIL**
- 3.1.4 Is the message area white with black text? (S4.5.1(b)(2)(ii))
 Driver side X Yes-Pass **No-FAIL**
 Passenger side X Yes-Pass **No-FAIL**
- 3.1.5 Is the message area at least 30 cm²? (S4.5.1(b)(2)(ii))
 Driver side: Length 12.5 cm Width 7.8 cm
 Passenger side: Length 12.5 cm Width 7.8 cm
 Driver actual message area 97.5 cm²
 Passenger actual message area 97.5 cm²
 Driver side X Yes-Pass **No-FAIL**
 Passenger side X Yes-Pass **No-FAIL**
- 3.1.6 Is the pictogram black on a white background? (S4.5.1(b)(2)(iii))
 Driver side X Yes-Pass **No-FAIL**
 Passenger side X Yes-Pass **No-FAIL**
- 3.1.7 Is the pictogram at least 30 mm (1.2 in) in length? (S4.5.1(b)(2)(iii))
 Driver side: Length 32 mm
 Passenger side: Length 32 mm
 Driver side X Yes-Pass **No-FAIL**
 Passenger side X Yes-Pass **No-FAIL**
- 3.2 Vehicles not certified to meet the requirements of S19, S21, and S23.
- 3.2.1 Is the label permanently affixed (including permanent marking on the visor material or molding into the visor material) to either side of the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing it? (S4.5.1 (b)(1))
 Driver side Yes-Pass **No-FAIL**
 Passenger side Yes-Pass **No-FAIL**
- 3.2.2 Does the label conform in content (vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children." (S4.5.1(b)(2)(v))) to the label shown in either Figure 6a or 6b as appropriate at each front outboard seating position? (S4.5.1 (b)(1))
 Driver side Yes-Pass **No-FAIL**
 Passenger side Yes-Pass **No-FAIL**
- 3.2.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (b)(1)(i))
 Driver side Yes-Pass **No-FAIL**
 Passenger side Yes-Pass **No-FAIL**
- 3.2.4 Is the message area white with black text? (S4.5.1 (b)(1)(ii))
 Driver side Yes-Pass **No-FAIL**
 Passenger side Yes-Pass **No-FAIL**
- 3.2.5 Is the message area at least 30 cm²? (S4.5.1 (b)(1)(ii))
 Driver side: Length Width
 Passenger side: Length Width
 Actual message area cm²
 Driver side Yes-Pass **No-FAIL**
 Passenger side Yes-Pass **No-FAIL**
- 3.2.6 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(b)(2)(iii))
 Driver side Yes-Pass **No-FAIL**
 Passenger side Yes-Pass **No-FAIL**

- 3.2.7 Is the pictogram at least 30 mm in diameter? (S4.5.1 (b)(2)(iii))
 Actual diameter _____ mm
 Driver side Yes-Pass _____ No-FAIL
 Passenger side Yes-Pass _____ No-FAIL
- 3.3 Is the same side of the sun visor that contains the air bag warning label free of other information with the exception of the air bag maintenance label and/or the rollover-warning label? (S4.5.1 (b)(3))
 Driver side ☒ Yes-Pass _____ No-FAIL
 Passenger side ☒ Yes-Pass _____ No-FAIL
- 3.4 Is the sun visor free of other information about air bags or the need to wear seat belts with the exception of the air bag alert label and/or the rollover-warning label? (S4.5.1 (b)(3))
 Driver side ☒ Yes-Pass _____ No-FAIL
 Passenger side ☒ Yes-Pass _____ No-FAIL
- 3.5 Does the driver side visor contain a rollover-warning label on the same side of the visor as the air bag warning label?
 _____ Yes (go to 3.5.1; ☒ No (go to 4.1, skipping 3.5.1 through 3.5.)
- 3.5.1 Are both the rollover-warning label and the air bag warning label surrounded by a continuous solid-lined border?
 _____ Yes (go to 3.5.2 and skip 3.5.3); _____ No (go to 3.5.3 and skip 3.5.2.)
- 3.5.2 Is the shortest distance from the border of the rollover label to the border of the air bag warning label at least 1 cm? (575.105 (d)(1)(iv)(B))
 _____ actual distance
 _____ Yes-Pass; _____ No-FAIL
- 3.5.3 Is the shortest distance from any of the lettering or graphics on the rollover-warning label to any of the lettering or graphics of the air bag warning label at least 3 cm? (575.105 (d)(1)(iv)(A)) _____ actual distance
 _____ Yes-Pass; _____ No-FAIL
4. Air Bag Alert Label (A "Rollover Warning Label" or "Rollover Alert Label" may be on the same side of the driver's sun visor as the "Air Bag Alert Label." 575.105(d))
- 4.1 Is the Sun Visor Warning Label visible when the sun visor is in the stowed position?
 Driver side ☒ Yes _____ No If yes, for driver and passenger go to 5.
 Passenger side _____ No air bag ☒ Yes _____ No
- 4.2 Is the air bag alert label permanently affixed (including permanent marking on the visor material or molding into the visor material) to the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing the label or the sun visor? (S4.5.1 (c))
 Driver side _____ Yes-Pass _____ No-FAIL
 Passenger side _____ Yes-Pass _____ No-FAIL
- 4.3 Is the air bag alert label visible when the visor is in the stowed position? (S4.5.1(c))
 Driver side _____ Yes-Pass _____ No-FAIL
 Passenger side _____ Yes-Pass _____ No-FAIL
- 4.4 Does the label conform in content to the label shown in Figure 6c? (S4.5.1(c))
 Driver side _____ Yes-Pass _____ No-FAIL
 Passenger side _____ Yes-Pass _____ No-FAIL
- 4.5 Is the message area black with yellow text? (S4.5.1(c)(1))
 Driver side _____ Yes-Pass _____ No-FAIL
 Passenger side _____ Yes-Pass _____ No-FAIL

- 4.6 Is the message area at least 20 cm²? (S4.5.1(c)(1))
 Driver side: Length _____, Width _____
 Passenger side: Length _____, Width _____
 Actual message area _____ cm²
 Driver side: _____ Yes-Pass _____ No-FAIL
 Passenger side: _____ Yes-Pass _____ No-FAIL
- 4.7 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(c)(2))
 Driver side: _____ Yes-Pass _____ No-FAIL
 Passenger side: _____ Yes-Pass _____ No-FAIL
- 4.8 Is the pictogram at least 20 mm in diameter? (S4.5.1(c)(2))
 Driver side: diameter _____ mm
 Passenger side: diameter _____ mm
 Driver side: _____ Yes-Pass _____ No-FAIL
 Passenger side: _____ Yes-Pass _____ No-FAIL
5. Label On the Dashboard
- 5.1 Is the vehicle certified to meet the requirements of S19, S21, and S23? (Obtain the answer to this question from the COTR.) (S4.5.1(e)(2))
X Yes (go to 5.1.1 and skip 5.2 through 5.2.5)
 _____ No (go to 5.2, skipping 5.1.1 through 5.1.6)
- 5.1.1 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e)(2))
X Yes-Pass; _____ No-FAIL
- 5.1.2 Is the label clearly visible from all front seating positions? (S4.5.1(e)(2))
X Yes-Pass; _____ No-FAIL
- 5.1.3 Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children." (S4.5.1(e)(2)(iii))) to the label shown in Figure 9? (S4.5.1(e)(2))
X Yes-Pass; _____ No-FAIL
- 5.1.4 Is the heading area yellow with black text? (S4.5.1(e)(2)(i))
X Yes-Pass; _____ No-FAIL
- 5.1.5 Is the message white with black text? (S4.5.1(e)(2)(ii))
X Yes-Pass; _____ No-FAIL
- 5.1.6 Is the message area at least 30 cm²? (S4.5.1(e)(2)(ii))
 Length 105 mm, Width 50 mm
 Actual message area 52.5 _____ cm²
X Yes-Pass; _____ No-FAIL
- 5.2 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e)(1))
 _____ Yes-Pass; _____ No-FAIL
- 5.2.1 Is the label clearly visible from all front seating positions? (S4.5.1(e)(1))
 _____ Yes-Pass; _____ No-FAIL
- 5.2.2 Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children 12 and under." to the label shown in Figure 7? (S4.5.1(e)(1)(iii))
 _____ Yes-Pass; _____ No-FAIL
- 5.2.3 Is the heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1(e)(1)(i))
 _____ Yes-Pass; _____ No-FAIL
- 5.2.4 Is the message white with black text? (S4.5.1(e)(1)(ii))
 _____ Yes-Pass; _____ No-FAIL
- 5.2.5 Is the message area at least 30 cm²? (S4.5.1(e)(1)(ii))
 Length _____, Width _____
 Actual message area _____ cm²
 _____ Yes-Pass; _____ No-FAIL

Label Outline, Vertical and Horizontal Line Black

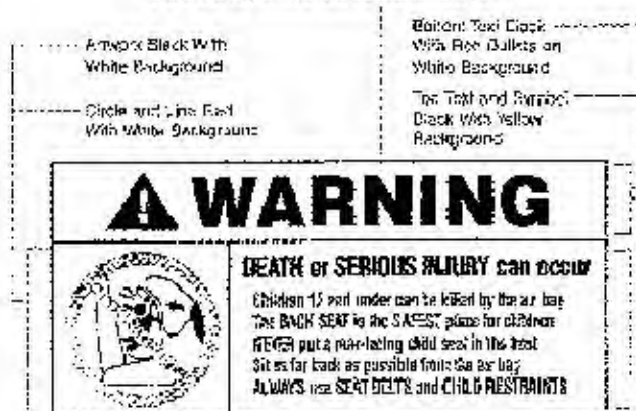


Figure 6a. Sun Visor Label Visible When visor is in Down Position.

Label Outline Vertical and Horizontal Line Black

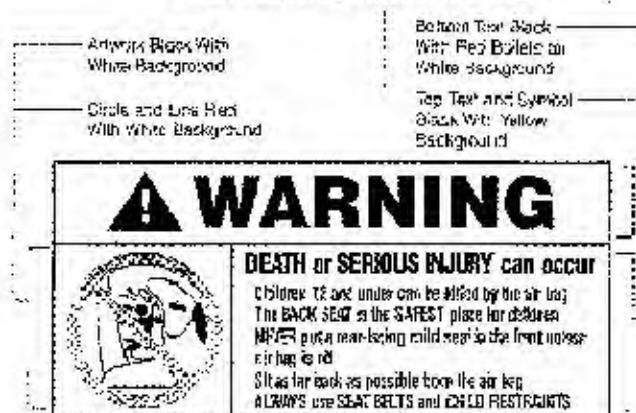


Figure 6b. Sun Visor Label Visible When Visor is in Up Position.



Figure 6c. Sun Visor Label Visible When Visor is in Up Position.

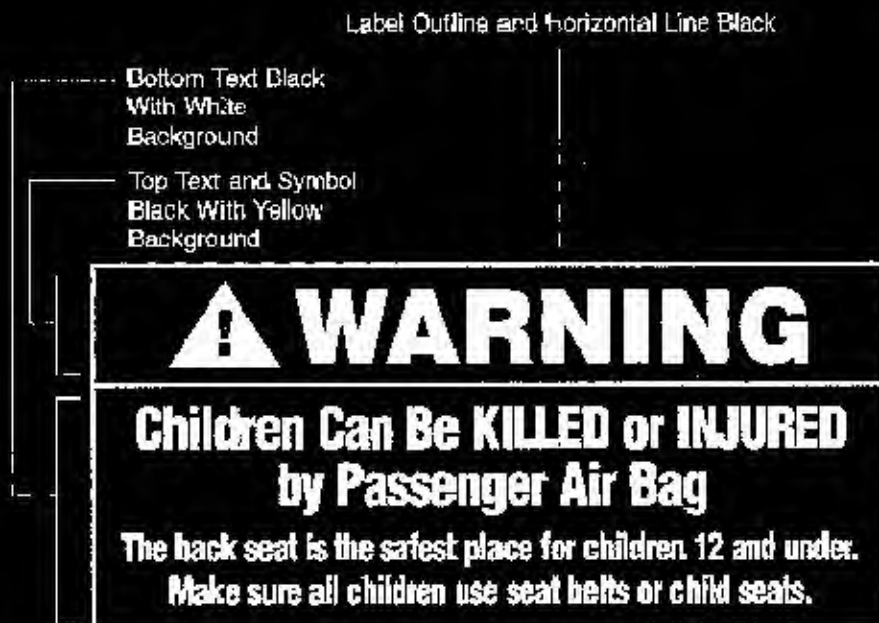


Figure 7. Removable Label on Dash.

Label Outline, Vertical and Horizontal Lines Black

Bottom Text and Artwork Black with
White Background

Top Text Black with
Yellow Background

! WARNING

EVEN WITH ADVANCED AIR BAGS



- Children can be killed or seriously injured by the air bag
- The back seat is the safest place for children
- Always use seat belts and child restraints
- See owner's manual for more information about air bags

Figure 8. Sun Visor Label Visible when Visor
is in Down Position.

Label Outline, Vertical and Horizontal Lines Black

Bottom Text Black with
White Background

Top Text Black with
Yellow Background

This Vehicle is Equipped with Advanced Air Bags

Even with Advanced Air Bags

Children can be killed or seriously injured by the air bag.

The back seat is the safest place for children.

Always use seat belts and child restraints.

See owner's manual for more information about air bags.

Figure 9. Removable Label on Dash.

DATA SHEET 6
FMVSS 208 READINESS INDICATOR (S4.5.2)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

An occupant restraint system that deploys in the event of a crash shall have a monitoring system with a readiness indicator. A totally mechanical system is exempt from this requirement. (11/8/94 legal interpretation to Lawrence F. Henneberger on behalf of Breed)

X 1. Is the system totally mechanical? Yes ; No X
(If YES this Data Sheet is complete.)

X 2. Describe the location of the readiness indicator: Left side of instrument cluster

X 3. Is the readiness indicator clearly visible to the driver?

X Yes-Pass; No-FAIL

X 4. Is a list of the elements in the occupant restraint system, being monitored by the readiness indicator, provided on a label or in the owner's manual?

X Yes-Pass; No-FAIL

X 5. Does the vehicle have an on-off switch for the passenger air bag?

X Yes (go to 6) No (this form is complete)

X 6. Is the air bag readiness indicator off when the passenger air bag switch is in the off position?

X Yes-Pass; No-FAIL

REMARKS:

DATA SHEET 7
Passenger Air Bag Manual Cut-Off Device (S4.5.4)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

- ☒ 1. Is the vehicle equipped with an on-off switch that deactivates the air bag installed at the right front outboard seating position?
____ Yes, go to 2
☒ No, this sheet is complete
- ____ 2. Does the vehicle have any forward-facing rear designated seating positions? (S4.5.4(a))
____ Yes, go to 3
____ No, go to 4
- ____ 3. Verification of the lack of room for a child restraint in the rear seat behind the driver's seat. (S4.5.4(b))
- ____ 3.1 Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
____ N/A - No lumbar adjustment
- ____ 3.2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
____ N/A - No additional support adjustment
- ____ 3.3 If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
____ N/A - No independent fore-aft seat cushion adjustment
- ____ 3.4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
____ N/A - No independent seat cushion height adjustment.
- ____ 3.5. Put the seat in its full rearward position. (S16.2.10.3.1)
____ N/A - the seat does not have a fore-aft adjustment
- ____ 3.6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
____ N/A - No seat height adjustment
- ____ 3.7 Draw a horizontal reference line on the side of the seat cushion.
- ____ 3.8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
____ N/A - The seat does not have a fore-aft adjustment.
- ____ 3.9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position. (S8.1.2)
____ N/A - The seat does not have fore-aft adjustment.
____ Mid position
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: _____
- ____ 3.10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.
____ N/A - No adjustments

- Angle of reference line as tested _____
- ____ 3.11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
- ____ N/A – No seat back angle adjustment
- Manufacturer's design seat back angle _____
- Tested seat back angle _____
- ____ 3.12 Is the driver seat a bucket seat?
- ____ Yes, go to 3.12.1 and skip 3.12.2.
- ____ No, go to 3.12.2 and skip 3.12.1.
- ____ 3.12.1 Bucket seats:
- ____ 3.12.1.1 Locate and mark a vertical Plane B through the longitudinal centerline of the seat driver's seat cushion. (S22.2.1.3) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
- Record the width of the seat. _____
- Record the distance from the edge of the seat to Plane B. _____
- ____ 3.12.1.2 Locate the longitudinal horizontal line in plane B that is tangent to the highest point of the rear seat cushion behind the driver's seat. Measure along this line from the front of the seat back of the rear seat to the rear of the seat back of the driver's seat.
- ____ mm distance
- ____ less than 720 mm – Pass
- ____ more than 720 mm – FAIL
- Go to 4
- ____ 3.12.2 Bench seats (including split bench seats):
- ____ 3.12.2.1 Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
- ____ 3.12.2.2 Locate the longitudinal horizontal line in plane B that is tangent to the highest point of the rear seat cushion. Measure along this line from the front of the seat back of the rear seat to the rear of the seat back of the front seat.
- ____ mm distance
- ____ less than 720 mm – Pass
- ____ more than 720 mm – FAIL
- Go to 4
4. Does the device turn the air bag on and off using the vehicle's ignition key? (S4.5.4.2)
- Yes-Pass; _____ No-FAIL
- ____ 5. Is the on-off device separate from the ignition switch? (S4.5.4.2)
- ____ Yes-Pass; _____ No-FAIL
- ____ 6. Is there a telltale light that comes on when the passenger air bag is turned off? (S4.5.4.2)
- ____ Yes-Pass; _____ No-FAIL
- ____ 7. Telltale light (S4.5.4.3)
- ____ 7.1 Is the light yellow? S4.5.4.3(a)
- ____ Yes-Pass; _____ No-FAIL
- 7.2 Are the words "PASSENGER AIR BAG OFF" (S4.5.4.3(b))
- ____ 7.2.1 on the telltale?
- ____ Yes – Pass, go to 7.3
- ____ No go to 7.2.2
- ____ 7.2.2 within 25 mm of the telltale? _____ mm from the edge of the telltale light
- ____ Yes-Pass; _____ No-FAIL

- ___ 7.3 Does the telltale remain illuminated while the air bag is turned off? (S4.5.4.3(c)) (Leave the air bag off for 5 minutes.)
 ___ Yes-Pass; ___ No-FAIL
- ___ 7.4 Is the telltale illuminated while the air bag is turned on? (S4.5.4.3(d))
 ___ Yes-Pass; ___ No-FAIL
- ___ 7.5 Is the telltale combined with the air bag readiness indicator? (S4.5.3(e))
 ___ Yes-Pass; ___ No-FAIL
8. Owner's manual
- ___ 8.1 Does the owner's manual contain complete instructions on the operation of the on-off switch? (S4.5.4.4(a))
 ___ Yes-Pass; ___ No-FAIL
- ___ 8.2 Does the owner's manual contain a statement that the on-off switch should only be used when a member of one of the following risk groups is occupying the right front passenger seating position? (S4.5.4.4(b))
- | | |
|------------------------|--|
| Infants: | there is no back seat |
| | the rear seat is too small to accommodate a child restraint |
| | there is a medical condition that must be monitored constantly |
| Children aged 1 to 12: | there is no back seat |
| | space is not always available in the rear seat |
| | there is a medical condition that must be monitored constantly |
| Medical condition: | medical risk causes special risk for passenger |
| | greater risk for harm than with the air bag on |
| ___ Yes-Pass; | ___ No-FAIL |
- ___ 8.3 Does the owner's manual contain a warning about the safety consequences of using the on-off switch at other times?
 ___ Yes-Pass; ___ No-FAIL

DATA SHEET 8
LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

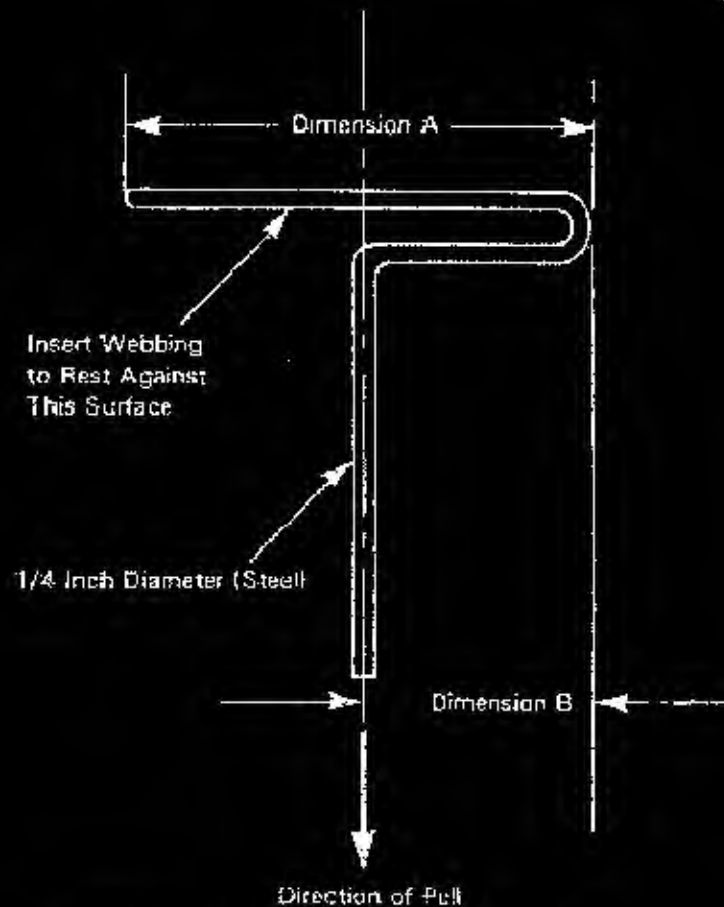
DESIGNATED SEATING POSITION: Front Row Center; Third Row Center

- ☒ X N/A -- No retractor is at this position
 N/A -- The retractor is an automatic locking retractor ONLY

1. Record test fore-aft seat position. _____ (S7.1.1.5 (c)(1))
(Any position is acceptable.)
2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
 Yes-Pass; No-FAIL.
3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
 Yes-Pass; No-FAIL.
4. Buckle the seat belt. (S7.1.1.5(c)(1))
5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
 Yes; No (If yes, go to 7.1. If no, go to 8.)
- 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
 Yes-Pass; No-FAIL.
8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B _____ inches
10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- ___ 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle _____ (spec. 5 - 15 degrees)
- ___ 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B _____ inches
- ___ 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate _____ lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B _____ inches (S7.1.1.5(c)(6))
- ___ 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= _____ inches;
___ Yes-Pass; ___ No-FAIL
- ___ 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= _____ inches;
___ Yes-Pass; ___ No-FAIL

REMARKS:



Dimension A - Width of Webbing Plus 1/2 Inch
 Dimension B - 1/2 of Dimension A

Figure 5. - Webbing Tension Pull Device

DATA SHEET 8
LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Right

 N/A – No retractor is at this position

 N/A – The retractor is an automatic locking retractor ONLY

- X 1. Record test fore-aft seat position. Mid (S7.1.1.5 (c)(1))
(Any position is acceptable.)
- X 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
X Yes-Pass; No-FAIL
- X 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
X Yes-Pass; No-FAIL
- X 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- X 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- X 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
X Yes; No (If yes, go to 7.1. If no, go to 8.)
- X 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
X Yes-Pass; No-FAIL
- X 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- X 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 48.5 inches
- X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10° (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 12.4 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 12.9 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) $13-12=$ 5 inches;
X Yes-Pass; No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) $9-13=$ 35.6 inches;
X Yes-Pass; No-FAIL

REMARKS:

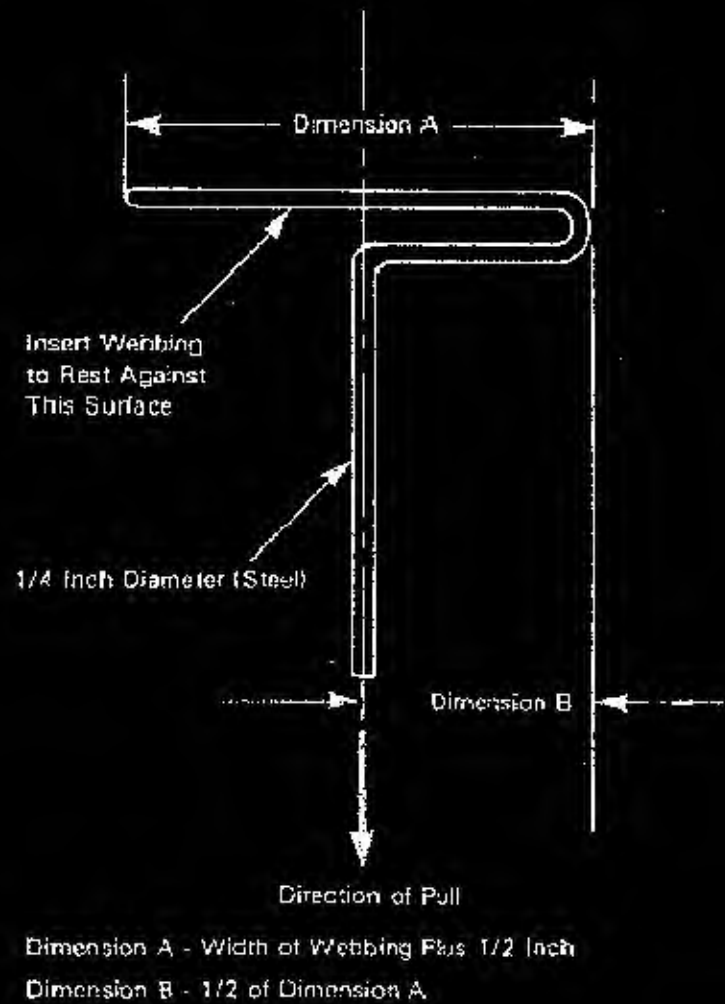


Figure 5. - Webbing Tension Pull Device

DATA SHEET 8
LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Left

☐ N/A – No retractor is at this position

☐ N/A – The retractor is an automatic locking retractor ONLY

☒ 1. Record test fore-aft seat position. Fixed (S7.1.1.5 (c)(1))
(Any position is acceptable.)

☒ 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))

☒ Yes-Pass; ☐ No-FAIL

☒ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))

☒ Yes-Pass; ☐ No-FAIL

☒ 4. Buckle the seat belt. (S7.1.1.5(c)(1))

☒ 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

☒ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

☒ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?

☒ Yes; ☐ No (If yes, go to 7.1. If no, go to 8.)

☒ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))

☒ Yes-Pass; ☐ No-FAIL

☒ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))

☒ 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

Measured distance between A and B 49.8 inches

☒ 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- ☒ 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10° (spec. 5 - 15 degrees)
- ☒ 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 27.5 inches
- ☒ 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 27.8 inches (S7.1.1.5(c)(6))
- ☒ 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) $13-12=$ 0.3 inches;
☒ Yes-Pass; No-FAIL
- ☒ 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) $9-13=$ 22.0 inches;
☒ Yes-Pass; No-FAIL

REMARKS:

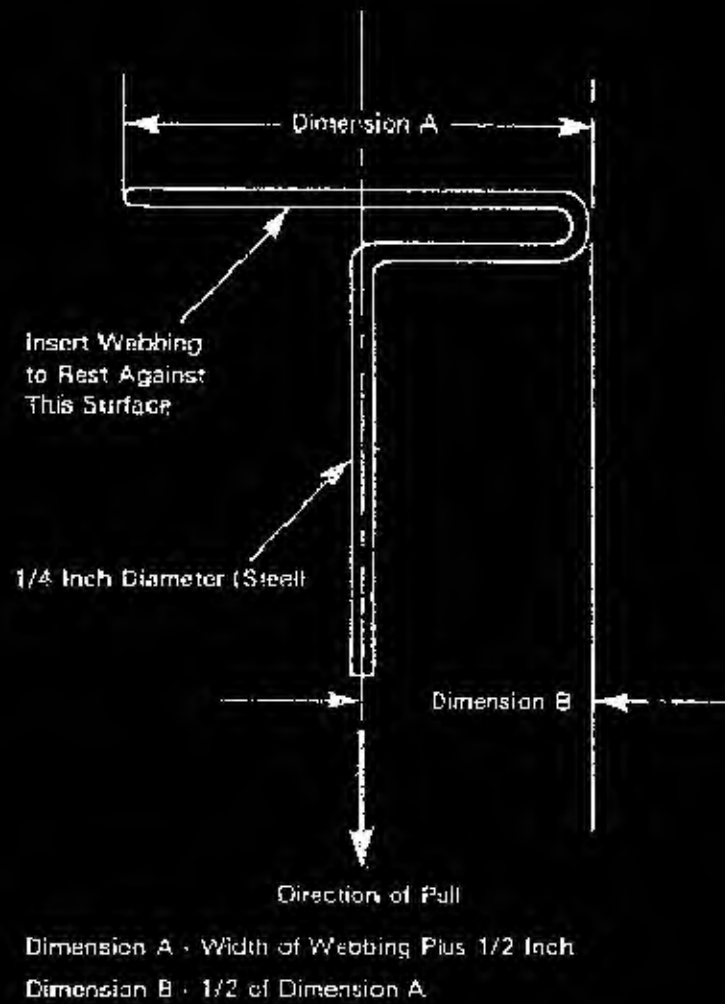


Figure 5. - Webbing Tension Pull Device

DATA SHEET 8
LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Center

 N/A – No retractor is at this position

 N/A – The retractor is an automatic locking retractor ONLY.

- X 1. Record test fore-aft seat position. Fixed (S7.1.1.5 (c)(1))
(Any position is acceptable.)
- X 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
X Yes-Pass; No-FAIL
- X 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
X Yes-Pass; No-FAIL
- X 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- X 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- X 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
X Yes; No (If yes, go to 7.1. If no, go to 8.)
- X 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
X Yes-Pass; No-FAIL
- X 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- X 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 45.4 inches
- X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10° (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 28.5 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 28.6 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 12 from the measurement in 13. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) $13-12=$ 0.1 inches;
X Yes-Pass; No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) $9-13=$ 16.8 inches;
X Yes-Pass; No-FAIL

REMARKS:

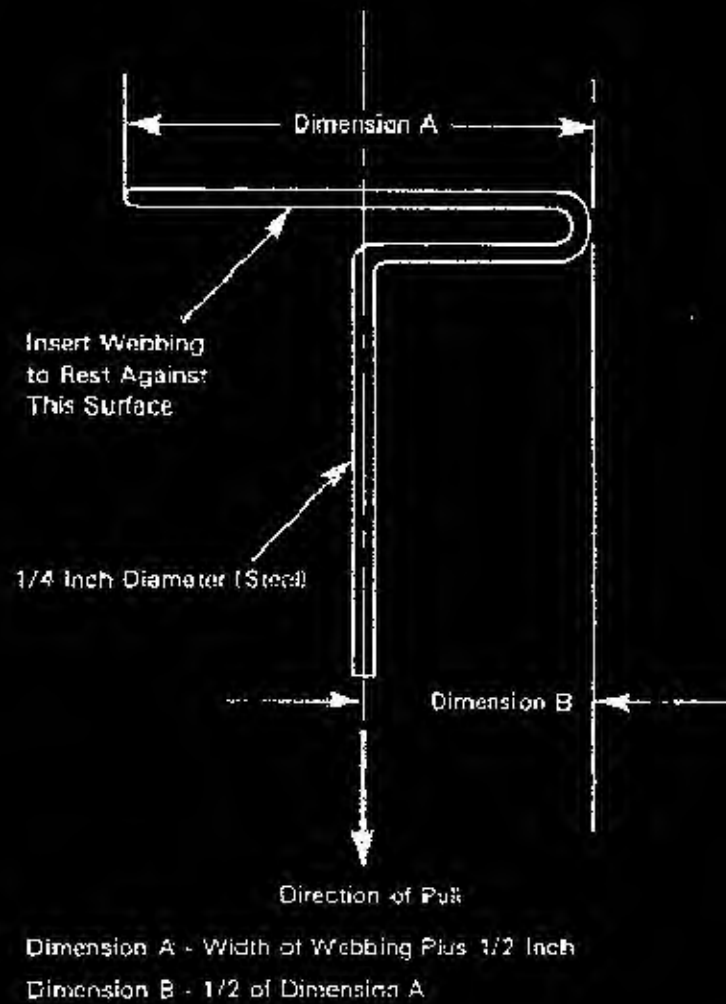


Figure 5. - Webbing Tension Pull Device

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Right

N/A – No retractor is at this position
N/A – The retractor is an automatic locking retractor ONLY

- X 1. Record test fore-aft seat position. Fixed _____ (S7.1.1.5 (c)(1))
(Any position is acceptable.)
- X 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
X Yes-Pass; _____ No-FAIL
- X 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
X Yes-Pass; _____ No-FAIL
- X 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- X 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- X 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
X Yes; _____ No (If yes, go to 7.1. If no, go to 8.)
- X 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
X Yes-Pass; _____ No-FAIL
- X 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- X 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 50.0 _____ inches
- X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10° (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 27.0 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 27.2 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 12 from the measurement in 13. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) $13-12=$ 0.2 inches;
X Yes-Pass; No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) $9-13=$ 22.8 inches;
X Yes-Pass; No-FAIL

REMARKS:

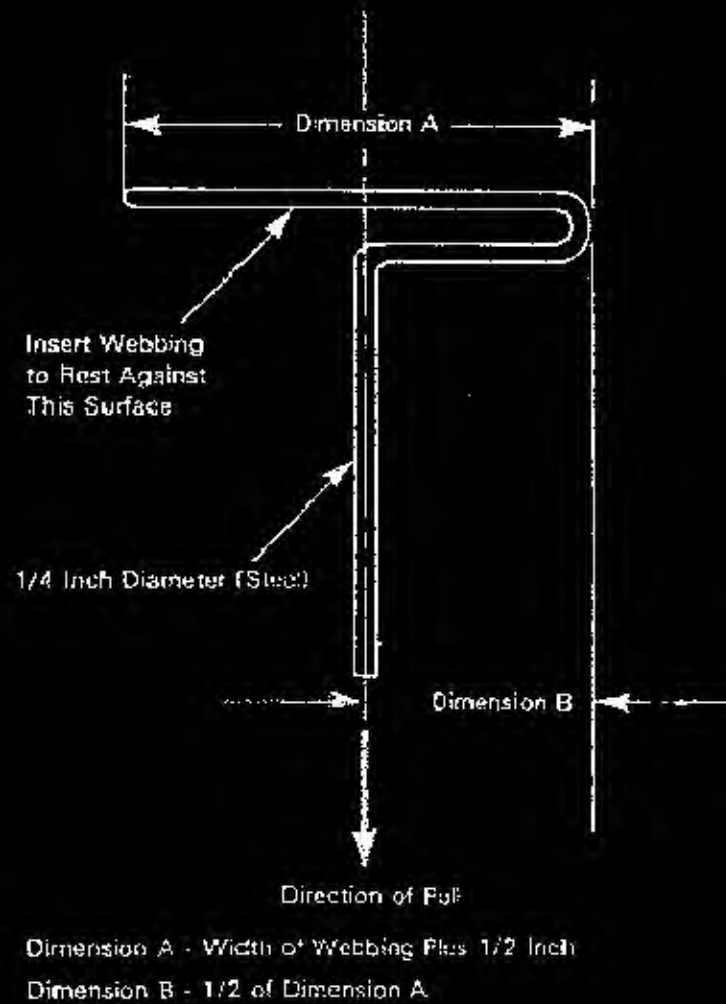


Figure 5. - Webbing Tension Pull Device

DATA SHEET 8
LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for each designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), and that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Left

 N/A – No retractor is at this position

 N/A – The retractor is an automatic locking retractor ONLY

- X 1. Record test fore-aft seat position. Fixed (S7.1.1.5(c)(1))
(Any position is acceptable.)
- X 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5(a))
 X Yes-Pass; No-FAIL
- X 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5(a))
 X Yes-Pass; No-FAIL
- X 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- X 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- X 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
 X Yes; No (If yes, go to 7.1. If no, go to 8.)
- X 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
 X Yes-Pass; No-FAIL
- X 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- X 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 44.0 inches
- X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10° (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 15.5 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 16.0 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.5 inches;
X Yes-Pass; No-FAIL.
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 28.0 inches;
X Yes-Pass; No-FAIL

REMARKS:

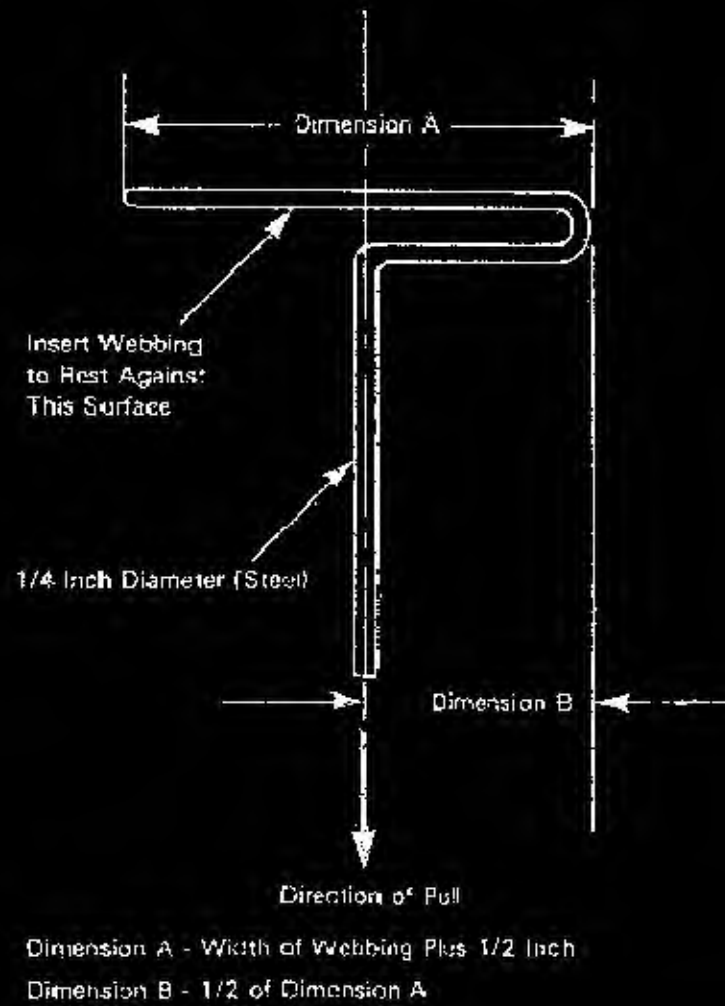


Figure 5. - Webbing Tension Pull Device

DATA SHEET 8
LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger
vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a)), and that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Right

- ☐ N/A – No retractor is at this position
☐ N/A – The retractor is an automatic locking retractor ONLY

- ☒ 1. Record test fore-aft seat position. Fixed (S7.1.1.5 (c)(1))
(Any position is acceptable.)
- ☒ 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
☒ Yes-Pass; ☐ No-FAIL
- ☒ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
☒ Yes-Pass; ☐ No-FAIL
- ☒ 4. Buckle the seat belt. (S7.1.1.5(c)(1))
- ☒ 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))
- ☒ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
- ☒ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
☒ Yes; ☐ No (If yes, go to 7.1. If no, go to 8.)
- ☒ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
☒ Yes-Pass; ☐ No-FAIL
- ☒ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))
- ☒ 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 44.2 inches
- ☒ 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

- X 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10° (spec. 5 - 15 degrees)
- X 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 15.0 inches
- X 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 15.5 inches (S7.1.1.5(c)(6))
- X 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.5 inches;
X Yes Pass; No-FAIL
- X 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 28.7 inches;
X Yes-Pass; No-FAIL

REMARKS:

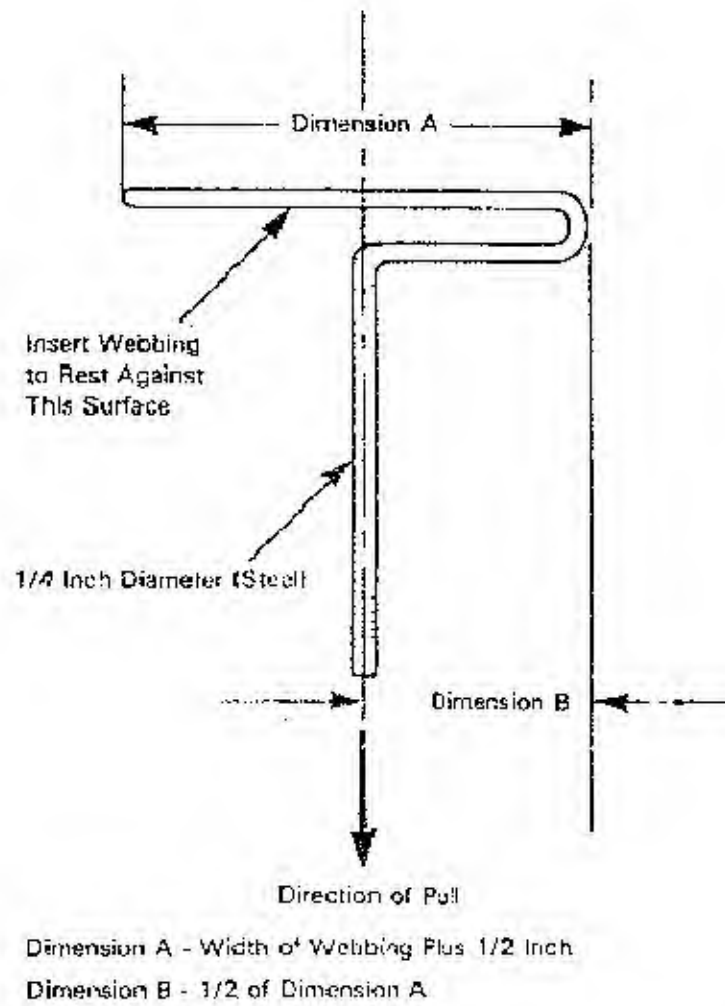


Figure 5. - Webbing Tension Pull Device

DATA SHEET 9
FMVSS 208 SEAT BELT WARNING SYSTEM CHECK (S7.3)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

- ☒ 1. The occupant is in the driver's seat.
☒ 2. The seat belt is in the stowed position.
☒ 3. The key is in the "on" or "start" position.
☒ 4. The time duration of the audible signal beginning with key "on" or "start" is 5 seconds.
☒ 5. The occupant is in the driver's seat.
☒ 6. The seat belt is in the stowed position.
☒ 7. The key is in the "on" or "start" position.
☒ 8. The time duration of the warning light beginning with key "on" or "start" is 7 seconds.
☒ 9. The occupant is in the driver's seat.
☒ 10. The seat belt is in the latched position and with at least 4 inches of belt webbing extended.
☒ 11. The key is in the "on" or "start" position.
☒ 12. The time duration of the audible signal beginning with key "on" or "start" is 0 seconds.
☒ 13. The occupant is in the driver's seat.
☒ 14. The seat belt is in the latched position and with at least 4 inches of belt webbing extended.
☒ 15. The key is in the "on" or "start" position.
☒ 16. The time duration of the warning light beginning with key "on" or "start" is 7 seconds.
☒ 17. Complete the following table with the data from 4, 8, 12 and 16 to determine which option is used

		Warning light	Warning light specification	Audible signal	Audible signal specification*
S7.3 (a)(1)	Belt latched & Key on or start	Item 16 <u>7</u>	0 seconds*	Item 12 <u>0</u>	0 seconds**
	Belt stowed & Key on or start	Item 8 <u>7</u>	60 seconds minimum	Item 4 <u>5</u>	4 to 8 seconds
S7.3 (a)(2)	Belt latched & Key on or start	Item 16 <u>7</u>	4 to 8 seconds	Item 12 <u>0</u>	0 seconds**
	Belt stowed & Key on or start	Item 8 <u>7</u>	4 to 8 seconds	Item 4 <u>5</u>	4 to 8 seconds

* 49 USCS @ 30124 does NOT allow an audible signal to operate for more than 8 seconds.

** 0 seconds means the light or audible signal are NOT permitted to operate under these conditions.
 See 7/12/00 interpretation to Patrick Raher of Hogan and Hartson

X 18. The seat belt warning system meets the requirements of (manufacturers may comply with either section)

 S7.3 (a)(1)

X S7.3 (a)(2)

 FAIL - Does NOT meet the requirements of either option

X 19. Note wording of visual warning: (S7.3(a)(1) and S7.3(a)(2))

 Fasten Seat Belts

 Fasten Belts

X Symbol 101

 FAIL - Does not use any of the above wording or symbol

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Left

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Does the vehicle incorporate a webbing tension-relieving device?
 Yes (this form is complete)
 X No (continue with this check sheet)
- X 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
 X N/A - No lumbar adjustment
- X 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 X N/A - No additional support adjustment
- X 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 X N/A - No independent fore-aft seat cushion adjustment
- X 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 X N/A - No independent seat cushion height adjustment.
- X 6. Put the seat in its full rearward position. (S16.2.10.3.1)
 N/A - the seat does not have a fore-aft adjustment
- X 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 N/A - No seat height adjustment
- X 8 Draw a horizontal reference line on the side of the seat cushion.
- X 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
- X 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
 X Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Center of 8 1/2 inch travel
 length
- X 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
 N/A - No adjustments
 Reference line angle as tested 0°

- ☒ 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
____ N/A – No adjustments
Manufacturer's design seat back angle 15.5°
Tested seat back angle 15.5°
- ☒ 13. Position the test dummies according to dummy position placement instructions in Appendix R and include the positioning check sheets.
- ☒ 14. Fasten the seat belt latch.
- ☒ 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- ☒ 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
Contact force 0.65 lb.
☒ 0.0 to 0.7 pounds – Pass
____ greater than 0.7 pounds – FAIL

DATA SHEET 10
BRJ.T CONTACT FORCE (S7.4.3)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Right

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?
 Yes (this form is complete)
 ☒ No (continue with this check sheet)
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
 ☒ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 ☒ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 ☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 ☒ N/A - No independent seat cushion height adjustment
- ☒ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
 ☒ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 ☒ N/A - No seat height adjustment
- ☒ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 ☒ N/A - The seat does not have a fore-aft adjustment.
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
 ☒ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Middle notch (12th of 23 notches)
- ☒ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
 ☒ N/A - No adjustments
 Reference line angle as tested: 0°

- X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 N/A - No adjustments
 Manufacturer's design seat back angle 15.5°
 Tested seat back angle 15.5°
- X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 14. Fasten the seat belt latch.
- X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
 Contact force 0.60 lb.
 X 0.0 to 0.7 pounds - Pass
 greater than 0.7 pounds - FAIL

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Center & Third Row Center are not Type 2

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☐ 1. Does the vehicle incorporate a webbing tension-relieving device?
☐ Yes (this form is complete)
☐ No (continue with this check sheet)
- ☐ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
☐ N/A - No lumbar adjustment
- ☐ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
☐ N/A - No additional support adjustment
- ☐ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
☐ N/A - No independent fore-aft seat cushion adjustment
- ☐ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
☐ N/A - No independent seat cushion height adjustment
- ☐ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
☐ N/A - the seat does not have a fore-aft adjustment
- ☐ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
☐ N/A - No seat height adjustment
- ☐ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☐ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
☐ N/A - The seat does not have a fore-aft adjustment.
- ☐ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
☐ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: _____
- ☐ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
☐ N/A - No adjustments
Reference line angle as tested: _____

- ___ 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
- ___ N/A No adjustments
- Manufacturer's design seat back angle _____
- Tested seat back angle _____
- ___ 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- ___ 14. Fasten the seat belt latch.
- ___ 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- ___ 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
- Contact force _____ lb.
- ___ 0.0 to 0.7 pounds - Pass
- ___ greater than 0.7 pounds - FAIL

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Left

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Does the vehicle incorporate a webbing tension-relieving device?
 Yes (this form is complete)
 X No (continue with this check sheet)
- X 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
 X N/A - No lumbar adjustment
- X 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 X N/A - No additional support adjustment
- X 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 X N/A - No independent fore-aft seat cushion adjustment
- X 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 X N/A - No independent seat cushion height adjustment.
- X 6. Put the seat in its full rearward position. (S16.2.10.3.1)
 X N/A - the seat does not have a fore-aft adjustment
- X 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 X N/A - No seat height adjustment
- X 8. Draw a horizontal reference line on the side of the seat cushion.
- X 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 X N/A - The seat does not have a fore-aft adjustment.
- X 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
 Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- X 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
 X N/A - No adjustments
 Reference line angle as tested: _____

- X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
X N/A – No adjustments
Manufacturer's design seat back angle _____
Tested seat back angle _____
- X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 14. Fasten the seat belt latch.
- X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
Contact force 0.60 lb.
X 0.0 to 0.7 pounds - Pass
____ greater than 0.7 pounds - FAIL

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NIHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Center

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?
☐ Yes (this form is complete)
☒ No (continue with this check sheet)
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
☒ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
☒ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
☒ N/A - No independent seat cushion height adjustment
- ☒ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
☒ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
☒ N/A - No seat height adjustment
- ☒ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
☒ N/A - The seat does not have a fore-aft adjustment.
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- ☒ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
☒ N/A - No adjustments
Reference line angle as tested: _____

- X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
- X N/A - No adjustments
- Manufacturer's design seat back angle _____
- Tested seat back angle _____
- X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 14. Fasten the seat belt latch.
- X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
- Contact force 0.60 lb.
- X 0.0 to 0.7 pounds - Pass
- ____ greater than 0.7 pounds - FAIL

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Right

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- X 1. Does the vehicle incorporate a webbing tension-relieving device?
____ Yes (this form is complete)
X No (continue with this check sheet)
- X 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
X N/A - No lumbar adjustment
- X 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
X N/A - No additional support adjustment
- X 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
X N/A - No independent fore-aft seat cushion adjustment
- X 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
X N/A - No independent seat cushion height adjustment.
- X 6. Put the seat in its full rearward position. (S16.2.10.3.1)
X N/A - the seat does not have a fore-aft adjustment
- X 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
X N/A - No seat height adjustment
- X 8. Draw a horizontal reference line on the side of the seat cushion.
- X 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
X N/A - The seat does not have a fore-aft adjustment.
- X 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
____ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- X 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
X N/A - No adjustments
Reference line angle as tested _____

- ☒ 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
☒ N/A No adjustments
Manufacturer's design seat back angle _____
Tested seat back angle _____
- ☒ 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- ☒ 14. Fasten the seat belt latch.
- ☒ 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- ☒ 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
Contact force 0.59 lb.
☒ 0.0 to 0.7 pounds - Pass
_____ greater than 0.7 pounds - FAIL

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): Third Row Left

DESIGNATED SEATING POSITION: R. Benavides

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?
☐ Yes (this form is complete)
☒ No (continue with this check sheet)
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
☒ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
☒ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
☒ N/A - No independent seat cushion height adjustment.
- ☒ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
☒ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
☒ N/A - No seat height adjustment
- ☒ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
☒ N/A - The seat does not have a fore-aft adjustment.
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- ☒ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
☒ N/A - No adjustments
Reference line angle as tested: _____

- X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
X N/A – No adjustments
Manufacturer's design seat back angle _____
Tested seat back angle _____
- X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 14. Fasten the seat belt latch.
- X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
Contact force 0.59 _____ lb.
X 0.0 to 0.7 pounds - Pass
_____ greater than 0.7 pounds - FAIL

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Right

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Does the vehicle incorporate a webbing tension-relieving device?
 ☐ Yes (this form is complete)
 ☒ No (continue with this check sheet)
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
 ☒ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 ☒ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 ☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 ☒ N/A - No independent seat cushion height adjustment.
- ☒ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
 ☒ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 ☒ N/A - No seat height adjustment
- ☒ 8. Draw a horizontal reference line on the side of the seat cushion.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 ☒ N/A - The seat does not have a fore-aft adjustment.
- ☒ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
 _____ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed
- ☒ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
 ☒ N/A - No adjustments
 Reference line angle as tested: _____

- X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 X N/A – No adjustments
 Manufacturer's design seat back angle _____
 Tested seat back angle _____
- X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.
- X 14. Fasten the seat belt latch.
- X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.
- X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.
 Contact force 0.59 lb.
 X 0.0 to 0.7 pounds - Pass
 ____ greater than 0.7 pounds - FAIL

DATA SHEET 11
LATCHPLATE ACCESS (S7.4.4)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (8.1.3)
☒ N/A - No lumbar adjustment
- ☒ 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
☒ N/A - No additional support adjustment
- ☒ 3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
☒ N/A - No independent seat cushion height adjustment.
- ☒ 5. Put the seat in its full rearward position. (S16.2.10.3.1)
☐ N/A - the seat does not have a fore-aft adjustment
- ☒ 6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
☐ N/A - No seat height adjustment
- ☒ 7. Draw a horizontal reference line on the side of the seat cushion
- ☒ 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
☐ N/A - The seat does not have a fore-aft adjustment.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the forwardmost fore-aft position for this test. (S10.7)
- ☒ 10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.
☐ N/A - No adjustments
Reference line angle as tested 0°

- ☒ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 ☐ N/A — No seat back angle adjustment
 Manufacturer's design seat back angle 15.5°
 Tested seat back angle 15.5°
- ☒ 12. Position the test dummy using the procedures in Appendix A. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position. Note on the Appendix A positioning check sheet any deviations necessary to position the Part 572, Subpart E dummy.) Include the positioning check sheet with this form.
- ☒ 13. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.
- ☒ 14. Attach the inboard reach string to the base of the head following the instructions on Figure 3.
- ☒ 15. Attach the outboard reach string to the torso sheath following the instructions on Figure 3.
- ☒ 16. Place the latch plate in the stowed position.
- ☒ 17. Extend inboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
 ☒ Yes-Pass; ☐ No
- ☒ 18. Extend outboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
 ☒ Yes-Pass; ☐ No
- ☒ 19. Is the latch plate within the inboard (item 17) or outboard (item 18) reach envelope?
 ☒ Yes-Pass; ☐ No-FAIL
- ☒ 20. Using the clearance test block, specified in Figure 4, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?
 ☒ Yes-Pass; ☐ No-FAIL

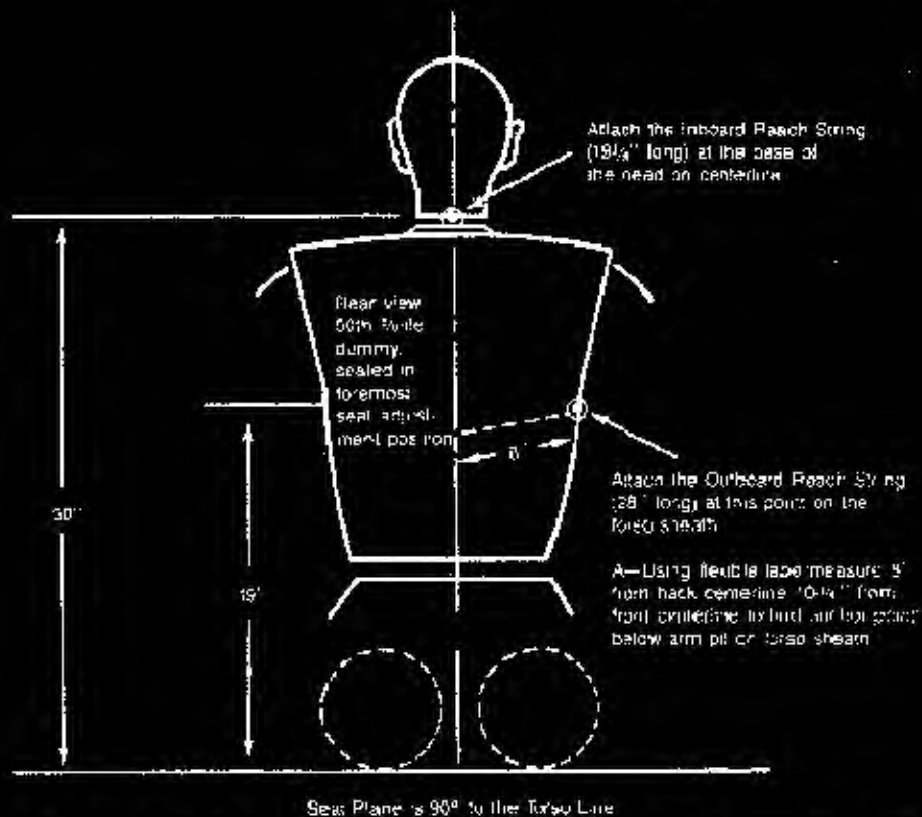


Figure 3. Location of Anchoring Points for Latchplate Reach Limiting Chains or Strings to Test for Latchplate Accessibility Using Subpart E Test Device

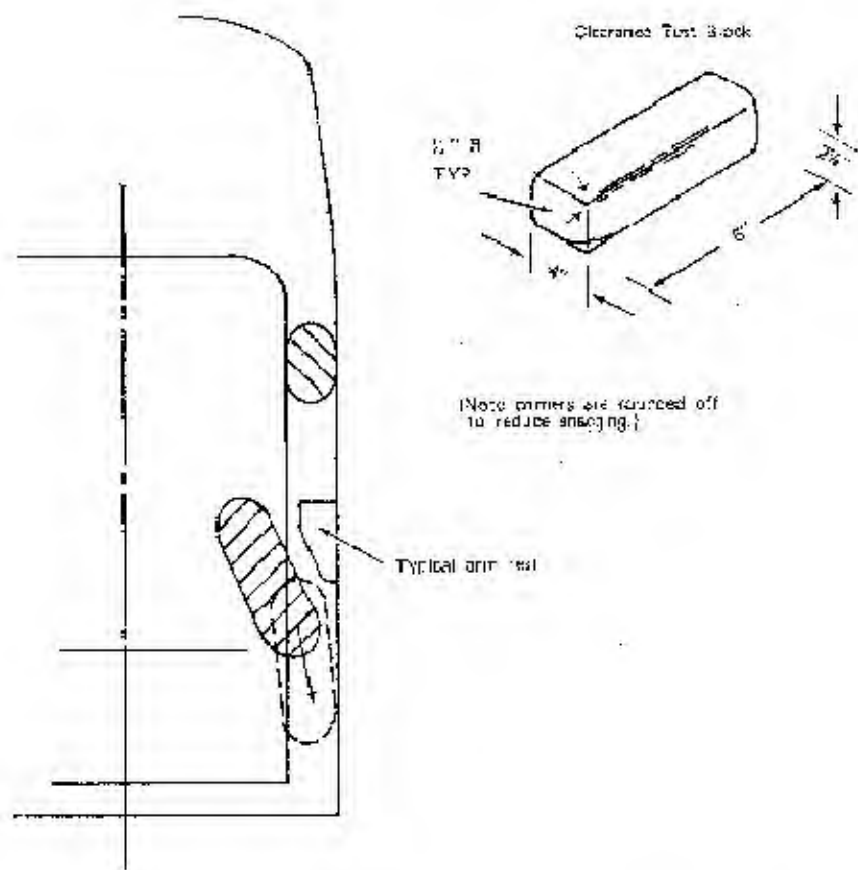


Figure 4—USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

DATA SHEET 11
LATCHPLATE ACCESS (S7.4.4)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Right Front

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (8.1.3)
☒ N/A - No lumbar adjustment
- ☒ 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
☒ N/A - No additional support adjustment
- ☒ 3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
☒ N/A - No independent seat cushion height adjustment.
- ☒ 5. Put the seat in its full rearward position. (S16.2.10.3.1)
☐ N/A - the seat does not have a fore-aft adjustment
- ☒ 6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
☒ N/A - No seat height adjustment
- ☒ 7. Draw a horizontal reference line on the side of the seat cushion
- ☒ 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
☐ N/A - The seat does not have a fore-aft adjustment.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the forwardmost fore-aft position for this test. (S10.7)
- ☒ 10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.
☒ N/A - No adjustments
Reference line angle as tested 0°

- ☒ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)
 ___ N/A - No seat back angle adjustment
 Manufacturer's design seat back angle 15.5°
 Tested seat back angle 15.5°
- ☒ 12. Position the test dummy using the procedures in Appendix A. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position. Note on the Appendix A positioning check sheet any deviations necessary to position the Part 572, Subpart H dummy.) Include the positioning check sheet with this form.
- ☒ 13. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.
- ☒ 14. Attach the inboard reach string to the base of the head following the instructions on Figure 3.
- ☒ 15. Attach the outboard reach string to the torso sheath following the instructions on Figure 3.
- ☒ 16. Place the latch plate in the stowed position.
- ☒ 17. Extend inboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
 ☒ Yes-Pass; ___ No
- ☒ 18. Extend outboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?
 ☒ Yes-Pass; ___ No
- ☒ 19. Is the latch plate within the inboard (item 17) or outboard (item 18) reach envelope?
 ☒ Yes-Pass; ___ No-FAIL
- ☒ 20. Using the clearance test block, specified in Figure 4, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?
 ☒ Yes-Pass; ___ No-FAIL

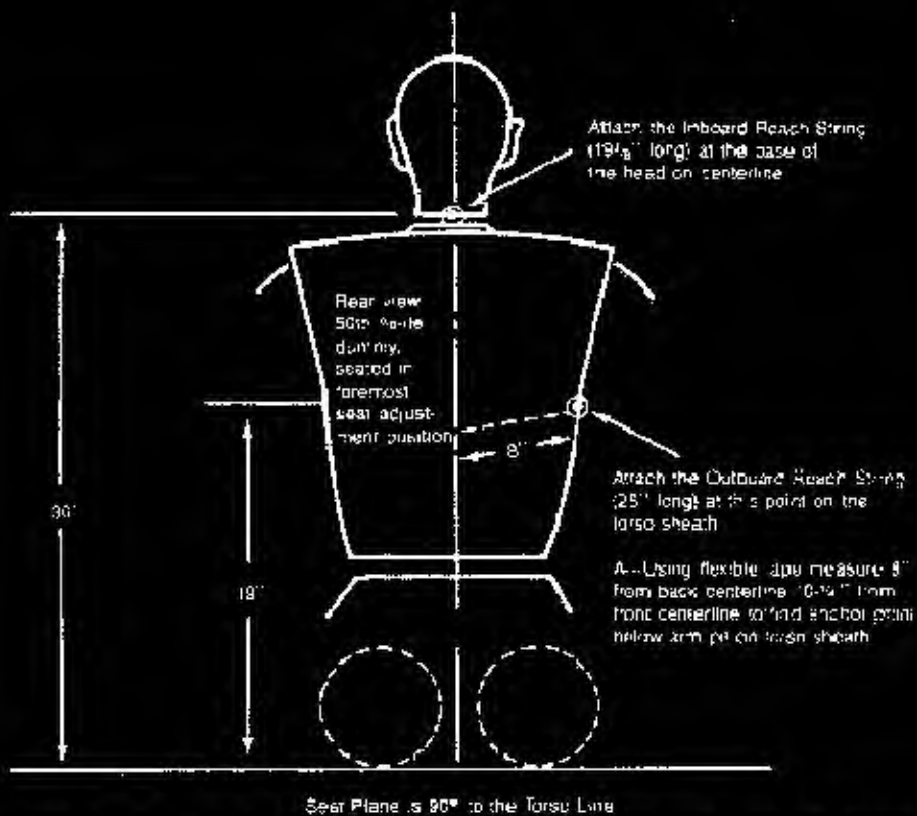


Figure 3. Location of Anchoring Points for Latchplate Reach Limiting Chains or Strings to Test for Latchplate Accessibility Using Subject E Test Device

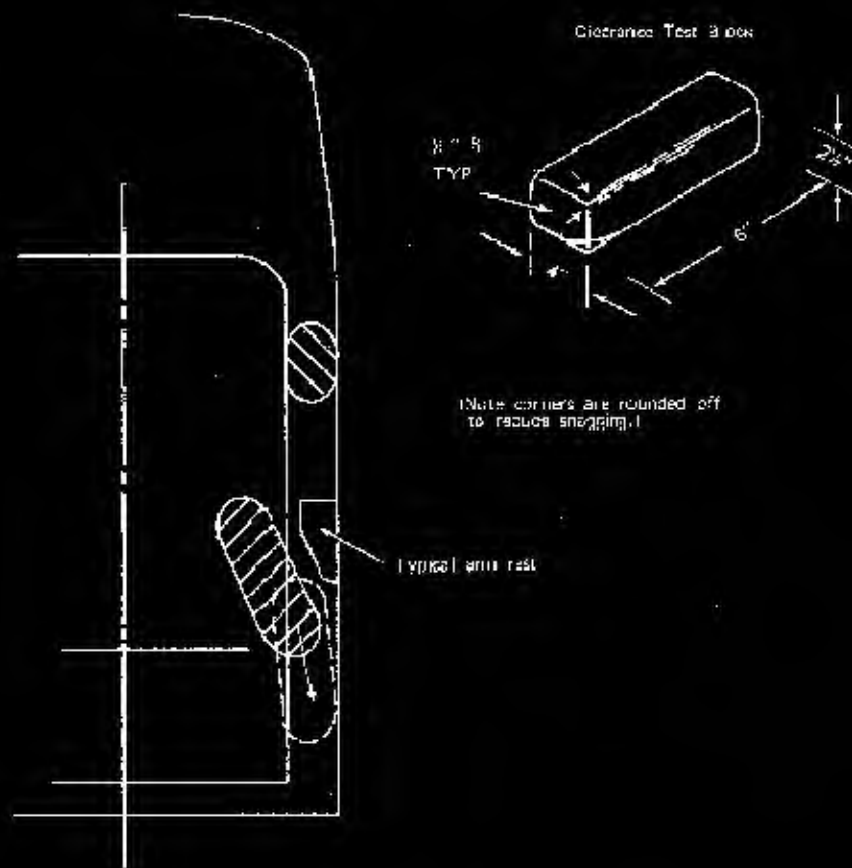


Figure 4. USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

DATA SHEET 12
SEAT BELT RETRACTION (S7.4.5)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

GVWR: 3175 kg/7000 lbs.

Test all front outboard seat belts, except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the vehicle a passenger car or walk-in van-type vehicle?
 ___ Yes, this form is complete
 ☒ No
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest retracted or deflated adjustment position. (S8.1.3)
 ☒ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 ☒ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 ☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 ☒ N/A - No independent seat cushion height adjustment.
- ☒ 6. Put the seat in its full rearward position.
 ☒ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S8.1.2)
 ___ N/A - No seat height adjustment
- ☒ 7 Draw a horizontal line on the side of the seat cushion.
- ☒ 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
 ___ N/A - The seat does not have a fore-aft adjustment.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position. (S8.1.2)
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Center of 8 1/2 inch travel length
- ☒ 10. If seat adjustments, other than fore-aft, are present and the reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2)
 ___ N/A - No seat adjustments
Reference angle as tested 0°

- ☒ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S8.1.3)
 ___ N/A -- No seat back angle adjustment
 Manufacturer's design seat back angle 15.5°
 Tested seat back angle 15.5°
- ☒ 12. If adjustable, set the head restraint at the full up and full forward position. (S8.1.3) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
 ☒ N/A -- No head restraint adjustment
- ☒ 13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)
 ☒ N/A -- No adjustable upper seat belt anchorage
 Manufacturer's specified anchorage position: _____
 Tested anchorage position: _____
- ☒ 14. Is the driver seat a bucket seat?
 ☒ Yes, go to 14.1 and skip 14.2.
 ___ No, go to 14.2 and skip 14.1.
- ☒ 14.1 Bucket seats:
 Locate and mark a vertical Plane B through the longitudinal centerline of the seat. The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat. 560 mm
 Record the distance from the edge of the seat to Plane B. 280 mm
- ___ 14.2 Bench seats (including split bench seats):
 ___ Driver seat: Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
 ___ Passenger seat: Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.
 Distance from the vehicle centerline to the center of the steering wheel _____
 Distance from the vehicle centerline to Plane B _____
- ☒ 15. Stow outboard armrests that are capable of being stowed. (S7.4.5)
- ☒ 16. Remove the arms of a Subpart E dummy and place it in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)
- ☒ 17. Rest the thighs on the seat cushion.
- ☒ 18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)
 ☒ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ☒ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ☒ pelvic angle (20° to 25°)
 ☒ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ☒ pelvic angle (20° to 25°) (S10.4.2.2)
- ☒ 19. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
 ☒ measured distance (10.6 inches) (S10.5)

- ☒ 20. To the extent practicable keep the thighs and the legs in a vertical plane (S10.5) and rest the thighs on the seat cushion while resting the feet on the floorpan or toe board.
- ☒ 21. Fasten the seat belt around the dummy.
- ☒ 22. Remove all slack from the lap belt portion. (S10.9)
- ☐ 23. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
- ☒ 24. Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
 3 pound load applied
- ☒ 25. Is the belt system equipped with a tension relieving device?
 Yes, continue
 ☒ No, go to 26
- ☐ 25.1 Introduce the maximum amount of slack into the upper torso belt that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9).
- ☒ 26. Check the statement that applies to this test vehicle:
- ☒ 26.1 The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released. ☒ Pass
- ☒ 26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. ☒ Pass
- ☐ 26.3 Neither A or B apply. FAIL
- ☒ 27. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?
 ☒ Yes-Pass; No-FAIL
- ☒ 28. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated?
 N/A
 ☒ Yes-Pass; No-FAIL

DATA SHEET 12
SEAT BELT RETRACTION (S7.4.5)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Right Front

GVWR: 3175 kg/7000 lbs.

Test all front outboard seat belts, except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the vehicle a passenger car or walk-in van-type vehicle?
____ Yes, this form is complete
☒ No
- ☒ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
☒ N/A - No lumbar adjustment
- ☒ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
☒ N/A - No additional support adjustment
- ☒ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
☒ N/A - No independent fore-aft seat cushion adjustment
- ☒ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
☒ N/A - No independent seat cushion height adjustment
- ☒ 6. Put the seat in its full rearward position.
____ N/A - the seat does not have a fore-aft adjustment
- ☒ 7. If the seat height is adjustable, put it in the full down position. (S8.1.2)
☒ N/A - No seat height adjustment
- ☒ 7 Draw a horizontal line on the side of the seat cushion.
- ☒ 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
____ N/A - The seat does not have a fore-aft adjustment.
- ☒ 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position. (S8.1.2)
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Middle notch (12th of 23 positions)
- ☒ 10. If seat adjustments, other than fore-aft, are present and the reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2)
☒ N/A - No seat adjustments
Reference angle as tested 0°

- ☒ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S8.1.3)
 ___ N/A – No seat back angle adjustment
 Manufacturer's design seat back angle 15.5°
 Tested seat back angle 15.5°
- ☒ 12. If adjustable, set the head restraint at the full up and full forward position. (S8.1.3) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
 ☒ N/A – No head restraint adjustment
- ☒ 13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)
 ☒ N/A – No adjustable upper seat belt anchorage
 Manufacturer's specified anchorage position. _____
 Tested anchorage position _____
- ☒ 14. Is the driver seat a bucket seat?
 ☒ Yes, go to 14.1 and skip 14.2.
 ___ No, go to 14.2 and skip 14.1.
- ☒ 14.1 Bucket seats:
 Locate and mark a vertical Plane B through the longitudinal centerline of the seat. The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat. 560 mm
 Record the distance from the edge of the seat to Plane B. 280 mm
- 14.2 Bench seats (including split bench seats):
 ___ Driver seat: Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.
 ___ Passenger seat: Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.
 Distance from the vehicle centerline to the center of the steering wheel _____
 Distance from the vehicle centerline to Plane B _____
- ☒ 15. Stow outboard armrests that are capable of being stowed. (S7.4.5)
- ☒ 16. Remove the arms of a Subpart E dummy and place it in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)
- ☒ 17. Rest the thighs on the seat cushion.
- ☒ 18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)
 ☒ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ☒ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
 ☒ pelvic angle (20° to 25°)
 ☒ vertical inches from the point 0.25 below the determined H point (0.5 inch max.) (S10.4.2.1)
 ☒ pelvic angle (20° to 25°) (S10.4.2.2)
- ☒ 19. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
 ___ measured distance (10.6 inches) (S10.5)

- ☒ 20. To the extent practicable keep the thighs and the legs in a vertical plane (S10.5) and rest the thighs on the seat cushion while resting the feet on the floorpan or toe board.
- ☒ 21. Fasten the seat belt around the dummy.
- ☒ 22. Remove all slack from the lap belt portion. (S10.9)
- ☒ 23. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
- ☒ 24. Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
 3 pound load applied
- ☒ 25. Is the belt system equipped with a tension relieving device?
 ___ Yes, continue
 ☒ No, go to 26
- ___ 25.1 Introduce the maximum amount of slack into the upper torso belt that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9). Go to 25.
- ☒ 26. Check the statement that applies to this test vehicle:
- ☒ 26.1 The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released. ☒ Pass
- ☒ 26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. ☒ Pass
- ___ 26.3 Neither A or B apply. ___ FAIL
- ☒ 27. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?
 ☒ Yes-Pass; ___ No-FAIL
- ☒ 28. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated?
 ___ N/A
 ☒ Yes-Pass; ___ No-FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1(b))
 ___ Yes; this form is complete
 ☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
 ___ Yes; this form is complete
 ☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
 ___ Yes; this form is complete
 ☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
 ___ Yes; go to 5.
 ☒ No; this form is complete.
- ☒ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
 ___ Yes-Pass; ___ **No-FAIL**
 Identify the part(s) on top of or above the seat.
 ___ seat belt latch plate; ___ buckle; ___ seat belt webbing
- ☒ 6. Are the remaining two seat belt parts accessible under normal conditions?
 ___ Yes-Pass; ___ **No-FAIL**
- ☒ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
 ___ Yes-Pass; ___ **No-FAIL**
- ☒ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
 ___ Yes-Pass; ___ **No-FAIL**
- ☒ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
 ___ Yes-Pass; ___ **No-FAIL**
- ☒ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
 ___ Yes-Pass; ___ **No-FAIL**

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc.

Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Center Front

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
 Yes; this form is complete
 ☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
 Yes; this form is complete
 ☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
 Yes; this form is complete
 ☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
 Yes; go to 5.
 ☒ No; this form is complete.
- ☐ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
 Yes-Pass: ☐ No-FAIL
 Identify the part(s) on top or above the seat.
 ☐ seat belt latch plate; ☐ buckle; ☐ seat belt webbing
- ☐ 6. Are the remaining two seat belt parts accessible under normal conditions?
 Yes-Pass; ☐ No-FAIL
- ☐ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
 Yes-Pass; ☐ No-FAIL
- ☐ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
 Yes-Pass; ☐ No-FAIL
- ☐ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
 Yes-Pass; ☐ No-FAIL
- ☐ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
 Yes-Pass; ☐ No-FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Right front

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
 ___ Yes; this form is complete
 ☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
 ___ Yes; this form is complete
 ☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
 ___ Yes; this form is complete
 ☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1 (a))
 ___ Yes; go to 5.
 ☒ No; this form is complete.
- ___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
 ___ Yes-Pass; ___ No-FAIL
 Identify the part(s) on top or above the seat.
 ___ seat belt latch plate; ___ buckle; ___ seat belt webbing
- ___ 6. Are the remaining two seat belt parts accessible under normal conditions?
 ___ Yes-Pass; ___ No-FAIL
- ___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
 ___ Yes-Pass; ___ No-FAIL
- ___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
 ___ Yes-Pass; ___ No-FAIL
- ___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
 ___ Yes-Pass; ___ No-FAIL
- ___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
 ___ Yes-Pass; ___ No-FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Left

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
____ Yes; this form is complete
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
____ Yes; this form is complete
☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
____ Yes; this form is complete
☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
____ Yes; go to 5.
☒ No; this form is complete.
- ____ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
____ Yes-Pass; ____ **No-FAIL**
Identify the part(s) on top or above the seat.
____ seat belt latch plate; ____ buckle; ____ seat belt webbing
- ____ 6. Are the remaining two seat belt parts accessible under normal conditions?
____ Yes-Pass; ____ **No-FAIL**
- ____ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
____ Yes-Pass; ____ **No-FAIL**
- ____ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
____ Yes-Pass; ____ **No-FAIL**
- ____ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
____ Yes-Pass; ____ **No-FAIL**
- ____ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
____ Yes-Pass; ____ **No-FAIL**

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Center

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
____ Yes; this form is complete
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
____ Yes; this form is complete
☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
____ Yes; this form is complete
☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
____ Yes; go to 5.
☒ No; this form is complete.
- ____ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
____ Yes-Pass; ____ No-FAIL
Identify the part(s) on top or above the seat.
____ seat belt latch plate; ____ buckle; ____ seat belt webbing
- ____ 6. Are the remaining two seat belt parts accessible under normal conditions?
____ Yes-Pass; ____ No-FAIL
- ____ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL
- ____ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL
- ____ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL
- ____ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NIJ/SA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Right

Test seat belts except those in: walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
 ___ Yes; this form is complete
 ☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
 ___ Yes; this form is complete
 ☒ No; got to 3
- ☒ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
 ___ Yes; this form is complete
 ☒ No; got to 4
- ☒ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
 ___ Yes; go to 5.
 ☒ No; this form is complete.
- ___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
 Yes-Pass; ___ No-FAIL
 Identify the part(s) on top or above the seat.
 ___ seat belt latch plate; ___ buckle; ___ seat belt webbing
- ___ 6. Are the remaining two seat belt parts accessible under normal conditions?
 ___ Yes-Pass; ___ No-FAIL.
- ___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
 Yes-Pass; ___ No-FAIL
- ___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
 ___ Yes-Pass; ___ No-FAIL.
- ___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
 Yes-Pass; ___ No-FAIL
- ___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
 ___ Yes-Pass; ___ No-FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Left

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
 ___ Yes; this form is complete
 ☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
 ☒ Yes; this form is complete
 ___ No; got to 3
- ___ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
 ___ Yes; this form is complete
 ___ No; got to 4
- ___ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
 ___ Yes; go to 5.
 ___ No; this form is complete.
- ___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
 ___ Yes-Pass; **No-FAIL**
 Identify the part(s) on top or above the seat.
 ___ seat belt latch plate; ___ buckle; ___ seat belt webbing
- ___ 6. Are the remaining two seat belt parts accessible under normal conditions?
 ___ Yes-Pass; **No-FAIL**
- ___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
 ___ Yes-Pass; **No-FAIL**
- ___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
 ___ Yes-Pass; **No-FAIL**
- ___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
 ___ Yes-Pass; **No-FAIL**
- ___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
 ___ Yes-Pass; **No-FAIL**

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Center

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
____ Yes; this form is complete
☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
☒ Yes; this form is complete
____ No; got to 3
- ____ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
____ Yes; this form is complete
____ No; got to 4
- ____ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
____ Yes; go to 5.
____ No; this form is complete.
- ____ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
____ Yes-Pass; ____ No-FAIL.
Identify the part(s) on top or above the seat.
____ seat belt latch plate; ____ buckle; ____ seat belt webbing
- ____ 6. Are the remaining two seat belt parts accessible under normal conditions?
____ Yes-Pass; ____ No-FAIL
- ____ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL
- ____ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL
- ____ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL
- ____ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
____ Yes-Pass; ____ No-FAIL

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104

Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Right

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

- ☒ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1(b))
 ___ Yes; this form is complete
 ☒ No; got to 2
- ☒ 2. Is the seat removable? (S7.4.6.1(b))
 ☒ Yes; this form is complete
 ___ No; got to 3
- ___ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
 ___ Yes; this form is complete
 ___ No; got to 4
- ___ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
 ___ Yes; go to 5.
 ___ No; this form is complete.
- ___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
 ___ Yes-Pass; ___ No-FAIL
 Identify the part(s) on top or above the seat.
 ___ seat belt latch plate; ___ buckle; ___ seat belt webbing
- ___ 6. Are the remaining two seat belt parts accessible under normal conditions?
 ___ Yes-Pass; ___ No-FAIL
- ___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
 ___ Yes-Pass; ___ No-FAIL
- ___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
 ___ Yes-Pass; ___ No-FAIL
- ___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
 ___ Yes-Pass; ___ No-FAIL
- ___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
 ___ Yes-Pass; ___ No-FAIL

DATA SHEET 26

VEHICLE WEIGHT, FUEL TANK, AND ATTITUDE DATA

NHTSA No.: C30104

Test Date: 11/11-14/02

Laboratory: TRC Inc. Test Technician(s): D. Ledley, B. Miller, M. Postle

Impact Angle: 0° Belled Dummies: X Yes No

Test Speed: 32 to 40 km/h X 0 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: X 5th female 50th male Passenger Dummy: X 5th female 50th male

- X 1. Fill the transmission with transmission fluid to the satisfactory range.
- X 2. Drain fuel from vehicle
- X 3. Run the engine until fuel remaining in the fuel delivery system is used and the engine stops.
- X 4. Record the useable fuel tank capacity supplied by the COIR. 33.5 gal (123.0 l)
- X 5. Record the fuel tank capacity supplied in the owner's manual. 31.0 gal (117.3 l)
- 6.¹ Using purple dyed Stoddard solvent having the physical and chemical properties of Type 1 solvent or cleaning fluid, Table 1, ASTM Standard D484-71, "Standard Specifications for Hydrocarbon Dry-cleaning Solvents," fill the fuel tank with an amount equal to the useable capacity provided by the COIR.
Amount added
- X 7. Crank the engine to fill the fuel delivery system with Stoddard solvent.
- X 8. Fill the coolant system to capacity.
- X 9. Fill the engine with motor oil to the max. mark on the dip stick.
- X 10. Fill the brake reservoir with brake fluid to its normal level.
- X 11. Fill the windshield washer reservoir to capacity.
- X 12. Inflate the tires to the tire pressure on the tire placard. If no tire placard is available, inflate the tires to the recommended pressure in the owner's manual.
Tire placard pressure RF 35 ; LF 35 ; RR 35 ; LR 35
Owner's manual pressure² RF N/A ; LF N/A ; RR N/A ; LR N/A
Actual inflated pressure RF 35 ; LF 35 ; RR 35 ; LR 35
- X 13. Record the vehicle weight at each wheel to determine the unloaded vehicle weight (UVW), i.e. "as delivered" weight).
Right Front = 581.0 kg Right Rear = 616.0 kg
Left Front = 658.5 kg Left Rear = 607.0 kg
TOTAL FRONT = 1239.5 kg TOTAL REAR = 1223.0 kg
% Total Weight = 50.3 % % Total Weight = 49.7 %
UVW - TOTAL FRONT PLUS TOTAL REAR = 2462.5 kg
- X 14. UVW Test Vehicle Attitude: (all dimensions in millimeters)
 - X 14.1 Mark a point on the vehicle above the center of each wheel.
 - X 14.2 Place the vehicle on a level surface.
 - X 14.3 Measure perpendicular to the level surface to the 4 points marked on the body and record the measurements
RF 913 ; LF 914 ; RR 933 ; LR 930

- X 15. Calculate the Rated Cargo and Luggage Weight (RCLW).
- X 15.1 Does the vehicle have the vehicle capacity weight (VCW) on the certification label or tire placard?
- Yes, go to 15.3.
- X No, go to 15.2.
- X 15.2 $VCW = \text{Gross Vehicle Weight} - UVW$
 $VCW = 3175 - 2462.5 = 712.5$
- X 15.3 $VCW = 712.5$
- X 15.4 Does the certification or tire placard contain the Designated Seating Capacity (DSC)?
- Yes, go to 15.6.
- X No, go to 15.5
- X 15.5 $DSC = \text{Total number of seat belt assemblies} = 9$
- X 15.6 $DSC = 9$
- X 15.7 $RCLW = VCW - (68 \text{ kg} \times DSC) = 712.5 - (68 \text{ kg} \times 9) = 100.5$
- X 15.8 Is the vehicle certified as a truck, MPV or bus (see the certification label on the door jamb)?
- X Yes, the maximum RCLW is 136 kg.
- No, use the RCLW calculated in 15.7.
- X 16. Fully Loaded Weight (100% fuel fill)
- X 16.1 Place the appropriate test dummy in both front outboard seating positions.
- Driver: X 5th female 50th male
- Passenger: X 5th female 50th male
- X 16.2 Load the vehicle with the RCLW from 15.7 or 15.8 whichever is applicable.
- X 16.3 Place the RCLW in the cargo area. Center the load over the longitudinal centerline of the vehicle. (S8.1.1 (d))
- X 16.4 Record the vehicle weight at each wheel to determine the Fully Loaded Weight.
- | | | | | | |
|----------------|---|------------------|----------------|---|------------------|
| Right Front | = | <u>605.6</u> kg | Right Rear | = | <u>699.4</u> kg |
| Left Front | = | <u>685.4</u> kg | Left Rear | = | <u>689.0</u> kg |
| TOTAL FRONT | = | <u>1291.0</u> kg | TOTAL REAR | = | <u>1388.4</u> kg |
| % Total Weight | = | <u>48.2</u> % | % Total Weight | = | <u>51.8</u> % |
| % GVW | = | <u>40.7</u> % | % GVW | = | <u>59.3</u> % |
- FULLY LOADED WEIGHT = TOTAL FRONT + TOTAL REAR = 2679.4 kg
- X 17. Fully Loaded Test Vehicle Attitude: (all dimensions in millimeters)
- X 17.1 Place the vehicle on a level surface.
- X 17.2 Measure perpendicular to the level surface to the 4 points marked on the body (see 14.1 above) and record the measurements
- RF 905; LF 905; RR 908; LR 910
- X 18.³ Calculate the test weight range (94% fuel fill).
- X 18.1 Calculated Test Weight = Fully Loaded Condition (See 16.4 above) - ((.06 x useable fuel tank capacity) x 0.79 kg/liter)
- Calculated Test Weight = 2679.4 - (.06 x 117.3 l x 0.79 kg/l) = 2673.8 kg
- X 18.2 Test Weight Range = Calculated Test Weight (- 4.5 kg, - 9 kg.)
- Max. Weight = Calculated Test Weight - 4.5 kg = 2669.3
- Min. Weight = Calculated Test Weight - 9 kg = 2664.8
- X 19. Remove the RCLW from the cargo area.

- 20.⁴ Remove Stoddard solvent from the gas tank in the amount of 6% of the useable capacity as supplied by the COTR. $.06 \times \underline{\hspace{2cm}}$ (useable capacity) = $\underline{\hspace{2cm}}$
Amount removed $\underline{\hspace{2cm}}$
- ☒ 21. Drain transmission fluid, engine coolant, motor oil, and windshield washer fluid from the test vehicle so that Stoddard solvent leakage from the fuel system will be evident.
- ☒ 22. Vehicle Components Removed For Weight Reduction:
None
-
- ☒ 23. Secure the equipment and ballast in the load carrying area and distribute it, as nearly as possible, to obtain the proportion of axle weight indicated by the gross axle weight ratings and center it over the longitudinal centerline of the vehicle.
- ☒ 24. If necessary, add ballast to achieve the actual test weight.
N/A
Weight of ballast 58.1 kg
- ☒ 25. Ballast, including test equipment, must be contained so that it will not shift during the impact event or interfere with data collection or interfere with high-speed film recordings or affect the structural integrity of the vehicle or do anything else to affect test results. Care must be taken to assure that any attachment hardware added to the vehicle is not in the vicinity of the fuel tank or lines.
- ☒ 26. Record the vehicle weight at each wheel to determine the actual test weight.

Right Front	=	<u>636.4</u>	kg	Right Rear	=	<u>699.6</u>	kg
Left Front	=	<u>671.8</u>	kg	Left Rear	=	<u>676.5</u>	kg
TOTAL FRONT	=	<u>1308.2</u>	kg	TOTAL REAR	=	<u>1376.1</u>	kg
% Total Weight	=	<u>48.7</u>	%	% Total Weight	=	<u>51.3</u>	%
% GVW	=	<u>41.2</u>	%	% GVW	=	<u>58.8</u>	%

(%GVW = Axle GVW : Vehicle GVW)

TOTAL FRONT PLUS TOTAL REAR = 2684.3 kg

- ☒ 27. Is the test weight between the Max. Weight and the Min. Weight (See 18.2)?

Yes

☒ No, explain why not. See Section 4.0, Discussion of Test Results

- ☒ 28. Test Weight Vehicle Attitude: (all dimensions in millimeters)

☒ 28.1 Place the vehicle on a level surface.

☒ 28.2 Measure perpendicular to the level surface to the 4 points marked on the body (see 3 above) and record the measurements

RF 910 ; LF 900 ; RR 898 ; LR 911

X 29. Summary of test attitude

X 29.1

AS DELIVERED: RF 913; LF 914; RR 933; LR 930

AS TESTED: RF 910; LF 900; RR 898; LR 911

FULLY LOADED: RF 905; LF 905; RR 908; LR 910

X 29.2 Is the "as tested" test attitude equal to or between the "fully loaded" and "as delivered" attitude?

 Yes

X No, explain why not. COTR approved on day of test.

¹ At this step the gasoline in the fuel tank was topped off (Stoddard was not introduced until after fully loaded weight and attitudes were obtained). The exact amount of fuel in the tank was unknown.

² The Owner's Manual said to see Certification/Tire Label for tire pressure.

³ The fuel tank capacity supplied in the Owner's Manual was used per the COTR.

⁴ At this step Stoddard solvent was introduced into the drained fuel tank: 0.94 x 117.3 liter (from Owner's Manual per COTR). A total of 110.3 liters was added.

DATA SHEET 27
Vehicle Accelerometer Location

NHTSA No.: C30104

Test Date: 11/12-13/02

Laboratory: TRC Inc. Test Technician(s): D. Ledley

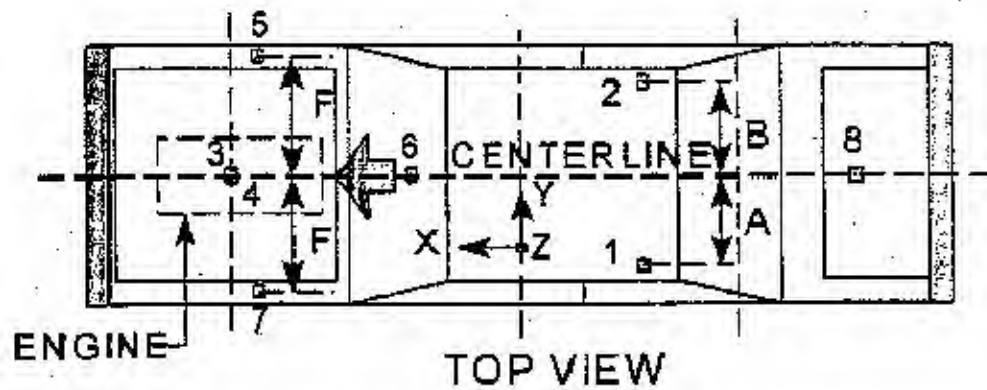
Impact Angle: 0° Belled Dummies: X Yes No

Test Speed: 32 to 40 km/h X 0 to 40 km/h 0 to 48 km/h 0 to 56 km/h

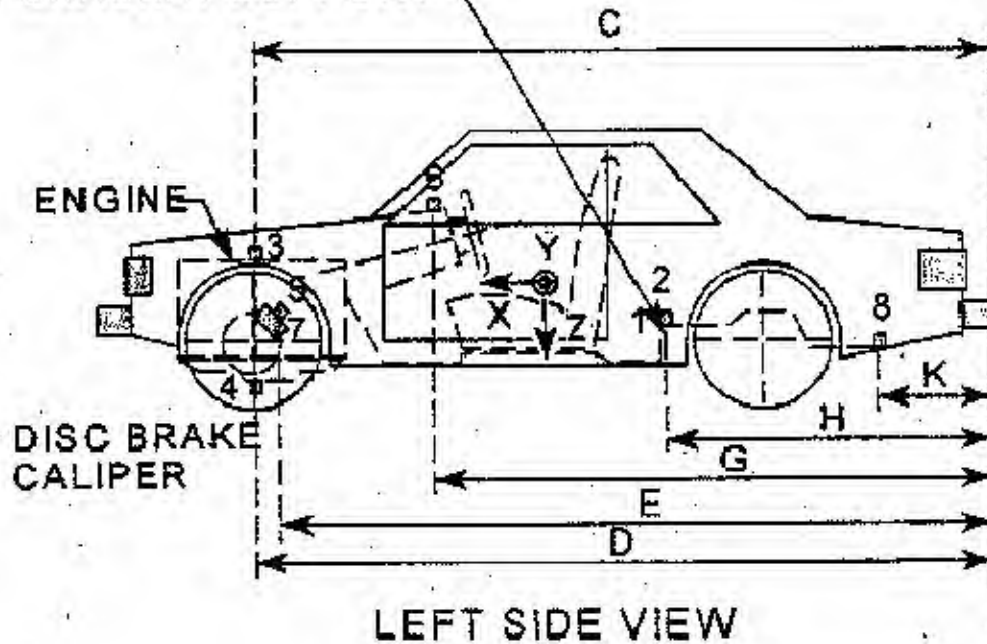
Driver Dummy: X 5th female 50th male Passenger Dummy: X 5th female 50th male

- X 1. Find the location where the vertical plane parallel to the longitudinal centerline of the vehicle and through the center of the left front outboard seating position intersects the left rear seat cross member. Install an accelerometer at this intersection on the rear seat cross member to record x-direction accelerations. Record the location on the following chart.
- X 2. Find the location where the vertical plane parallel to the longitudinal centerline of the vehicle and through the center of the right front outboard seating position intersects the right rear seat cross member. Install an accelerometer at this intersection on the rear seat cross member to record x-direction accelerations. Record the location on the following chart.
- X 3. Find the location where a vertical plane through the longitudinal centerline of the vehicle and a vertical transverse plane through the center of the two wheels on opposite sides of the engine intersect at the top of the engine. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.
- X 4. Find the location where a vertical plane through the longitudinal centerline of the vehicle and a vertical transverse plane through the center of the two wheels on opposite sides of the engine intersect the bottom of the engine. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.
- X 5. Install an accelerometer on the right front brake caliper to record x-direction accelerations. Record the location on the following chart.
- X 6. Find the location where a vertical plane through the longitudinal centerline of the vehicle intersects the top of the instrument panel. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.
- X 7. Install an accelerometer on the left front brake caliper to record x-direction accelerations. Record the location on the following chart.
- X 8. Find the location where a vertical plane through the longitudinal centerline of the vehicle intersects the floor of the trunk. Install an accelerometer on the trunk floor at this intersection to record z-direction accelerations. Record the location on the following chart.

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



DATA SHEET 27
VEHICLE ACCELEROMETER LOCATION MEASUREMENTS

<u>DIMENSION</u>	<u>LENGTH (mm)</u>
<u>PRE-TEST VALUES</u>	
<u>A</u>	*
<u>B</u>	*
<u>C</u>	4642
<u>D</u>	4350
<u>E</u>	4480 left; 4480 right
<u>F</u>	*
<u>G</u>	3786
<u>H</u>	2445 left; 2405 right
<u>K</u>	303
<u>POST-TEST VALUES</u>	
<u>A</u>	710
<u>B</u>	657
<u>C</u>	4642
<u>D</u>	4367
<u>E</u>	4400 left; 4527 right
<u>F</u>	*
<u>G</u>	3786
<u>H</u>	2450 left; 2410 right
<u>K</u>	305

REMARKS: * Several lateral measurements were inadvertently omitted.

DATA SHEET 28
Photographic Targets

NHTSA No.: C30104

Test Date: 11/12-14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides, B. Miller, J. Clarridge, M. Postle

Impact Angle: 0° Offset percentage: 40 Belied Dummies: X Yes No

Test Speed: 32 to 40 km/h X 0 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: X 5th female 50th male Passenger Dummy: X 5th female 50th male

1. FMVSS 208 vehicle targeting requirements (See Figures 28A and 28B)
- X 1.1 Targets A1 and A2 are on flat rectangular panels.
- X 1.2 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted at the front on the outboard sides of A1 and A2. The center of each circular target is 100 mm from the one next to it. Distance between targets 127 mm
- X 1.3 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted at the back on the outboard sides of on A1 and A2. The center of each circular target is 100 mm from the one next to it. Distance between targets 127 mm
- X 1.4 The distance between the first circular target at the front of A1 and A2 and the last circular target at the back of A1 and A2 is at least 915 mm.
Distance between the first and last circular targets 915 mm
- X 1.5 Firmly fix target A1 on the vehicle roof in the vertical longitudinal plane that is coincident with the midsagittal plane of the driver dummy.
- X 1.6 Firmly fix target A2 on the vehicle roof in the vertical longitudinal plane that is coincident with the midsagittal plane of the passenger dummy.
- X 1.7 Two circular targets (C1 and C2) at least 90 mm in diameter and with black and yellow quadrants are mounted on the outside of the driver door. The centers of each circular target are at least 610 mm apart. Distance between targets 610 mm
- X 1.8 Two circular targets (C1 and C2) at least 90 mm in diameter and with black and yellow quadrants are mounted on the outside of the passenger door. The centers of each circular target are at least 610 mm apart. Distance between targets 610 mm
- X 1.9 Place tape with squares having alternating colors on the top portion of the steering wheel.
- X 1.10 Chalk the bottom portion of the steering wheel.
- X 1.11 Is this an offset test?
X Yes, continue with this section
 No, go to 2.
- X 1.12 Measure the width of the vehicle. Vehicle width 1994 mm
- X 1.13 Find the centerline of the vehicle. ($\frac{1}{2}$ of the vehicle width)
- X 1.14 Find the line parallel to the centerline of the vehicle and 0.1 x vehicle width from the centerline of the vehicle.
- X 1.15 Apply 25 mm wide tape with alternating black and yellow squares parallel to and on each side of the line found in 1.14. The edge of each tape shall be 50 mm from the line found in 1.14. The tape shall extend from the bottom of the bumper to the front edge of the windshield. (Figure 2813)

2. Barrier targeting
- ☒ 2.1 Fix two stationary targets D1 and D2 to the barrier as shown in the Figure 28A. One target is in the vertical longitudinal plane that is coincident with the midsagittal plane of the driver dummy. The other is in the vertical longitudinal plane that is coincident with the midsagittal plane of the passenger dummy.
- Only one target over driver dummy.
- ☒ 2.2 Targets D1 and D2 are on a rectangular panel. No D2 target
- ☒ 2.3 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted on the sides of the rectangular panel away from the longitudinal centerline of the vehicle. The center of each circular target is 100 mm from the one next to it.
- Distance between circular targets on D1 127 mm
- Distance between circular targets on D2 N/A mm
3. FMVSS 208 dummy targeting requirements
- ☒ 3.1 Place a circular target with black and yellow quadrants on both sides of the driver dummy head as close as possible to the center of gravity of the head in the x and z direction (relative to the measuring directions of the accelerometers).
- ☒ 3.2 Place a circular target with black and yellow quadrants on both sides of the passenger dummy head as close as possible to the center of gravity of the head in the x and z direction (relative to the measuring directions of the accelerometers).
- ☒ 3.3 Place a circular target with black and yellow quadrants on the outboard shoulder of the driver dummy. Place the target as high up on the arm as possible at the intersection of the arm and shoulder. The sleeve of the shirt on the dummy may be cut to make the target visible, but do not remove any material.
- ☒ 3.4 Place a circular target with black and yellow quadrants on the outboard shoulder of the passenger dummy. Place the target as high up on the arm as possible at the intersection of the arm and shoulder. The sleeve of the shirt on the dummy may be cut to make the target visible, but do not remove any material.
4. FMVSS 204 targeting requirements
- ☒ 4.1 Is an FMVSS 204 indicant test ordered on the "COTR Vehicle Work Order?"
- Yes, continue with this form.
- ☒ No, this form is complete
- 4.2 Rosection panel (Figure 28C)
- 4.2.1 The panel deviates no more than 6 mm from perfect flatness when suspended vertically.
- 4.2.2 The 8 targets on the panel are circular targets at least 90 mm in diameter and with black and yellow quadrants.
- 4.2.3 The center of each of the 4 outer targets are placed within 1 mm of the corners of a square measuring 914 mm on each side.
- 4.2.4 Locate another square with 228 mm sides and with the center of this square coincident with the center of the 914 mm square.
- 4.2.5 The center of the 4 inner targets are placed at the midpoints of each of the 228 mm sides.
- 4.3 Place a circular target at least 90 mm in diameter and with black and yellow quadrants on a material (cardboard, metal, etc.) that can be taped to the top of the steering column.
- 4.4 Tape the target from 4.3 to the top of the steering column in a manner that does not interfere with the movement of the steering column in a crash.

REFERENCE PHOTO TARGETS

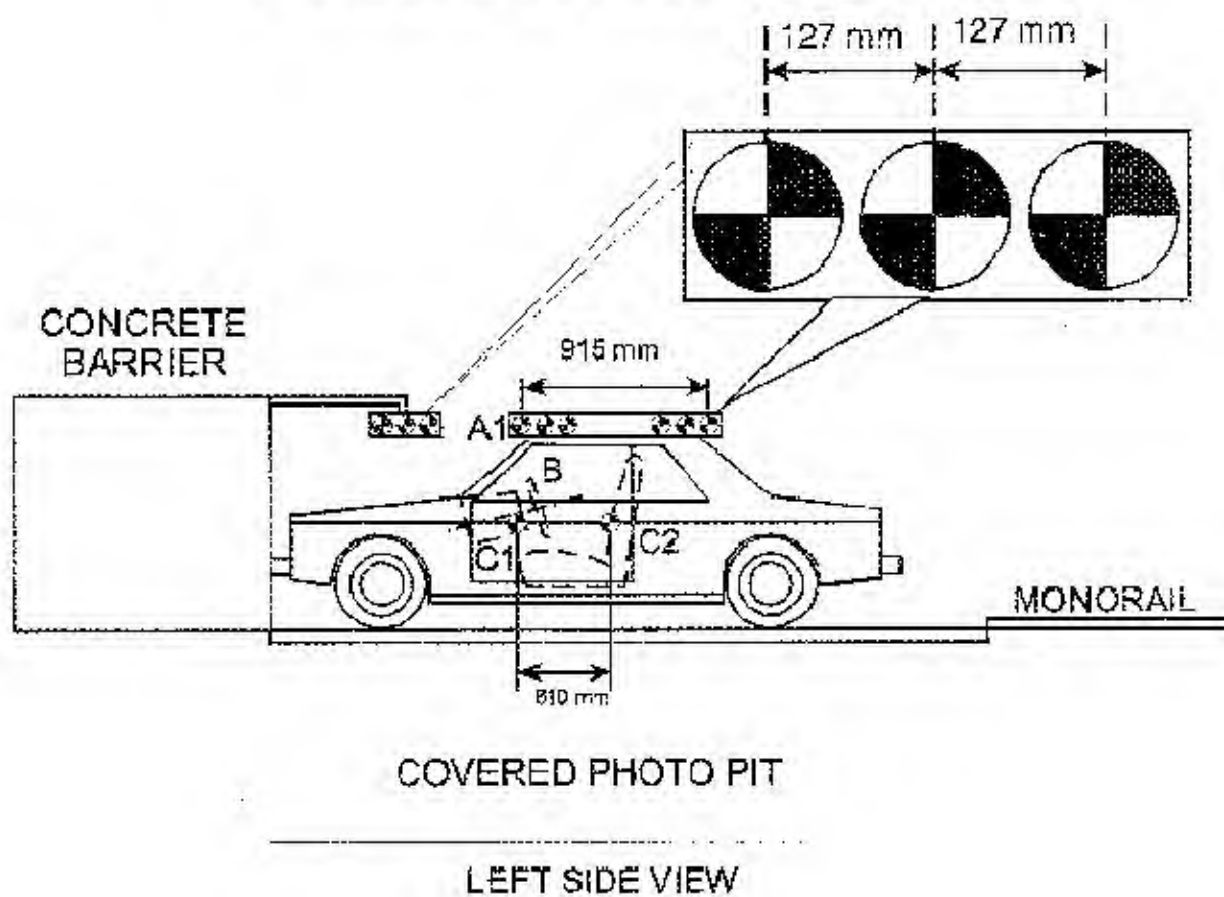
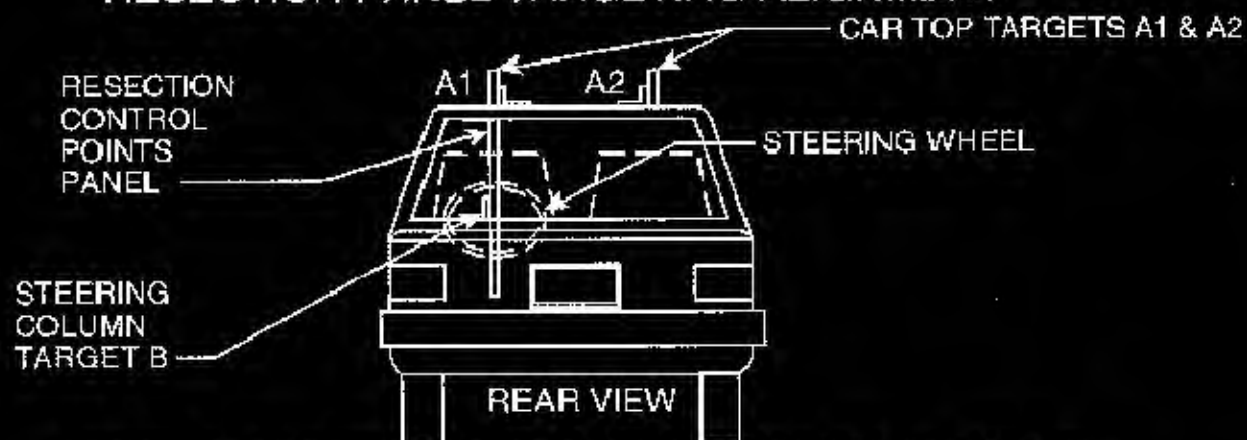


FIGURE 28A

RESECTION PANEL TARGETING ALIGNMENT



TEST RUN STEERING COLUMN CAMERA VIEW OF TYPICAL TIME ZERO VEHICLE POSITION

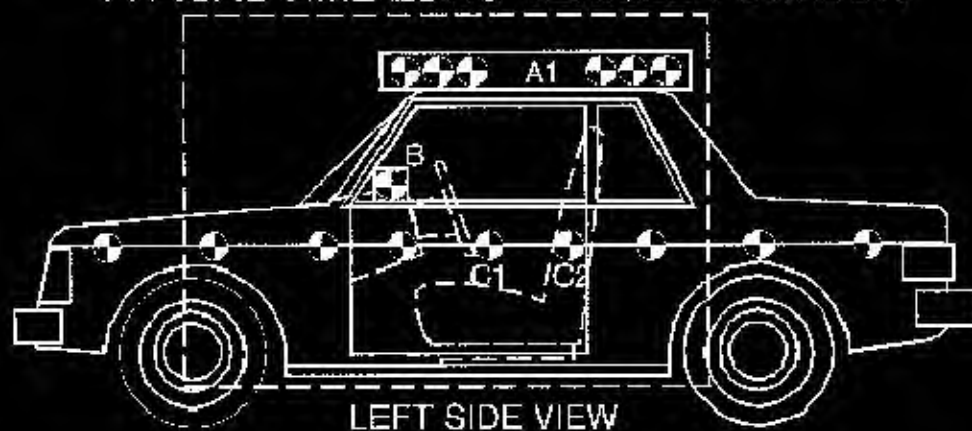
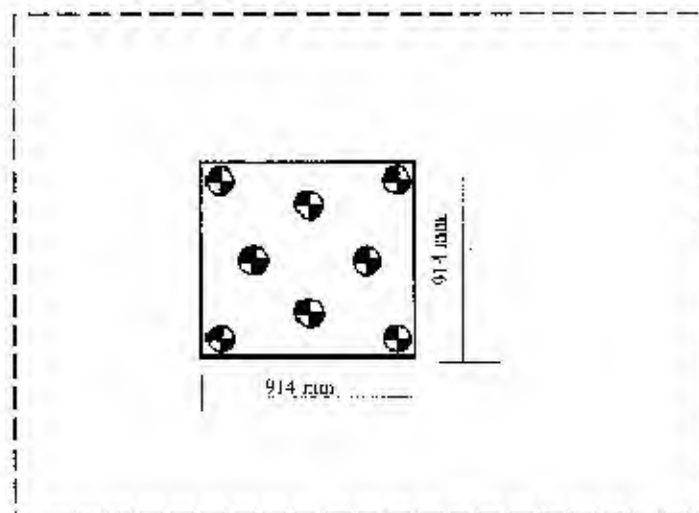


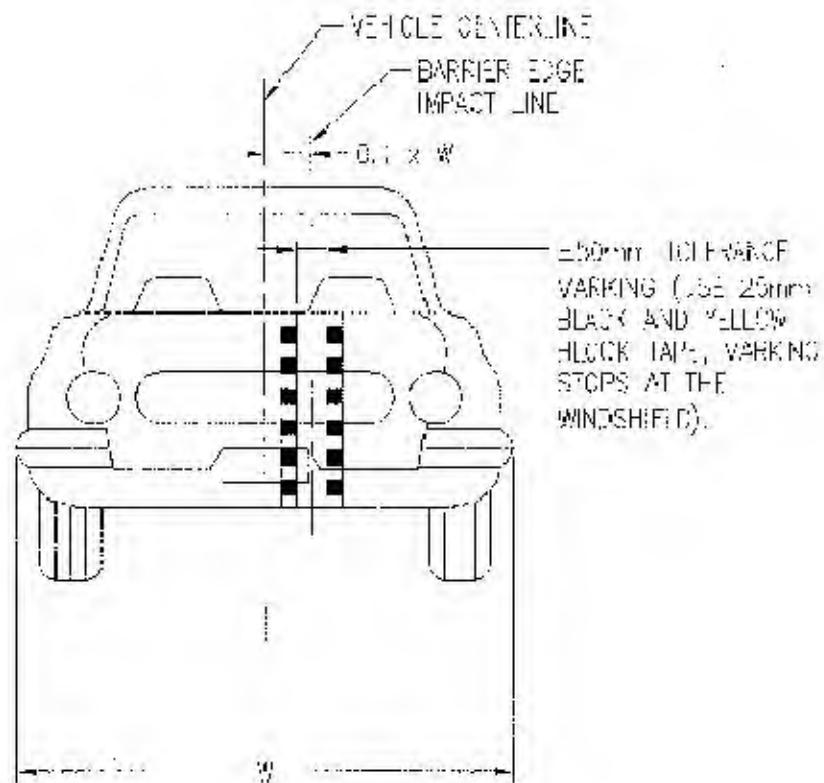
FIGURE 28B

PRE-RUN STEERING COLUMN HIGH SPEED CAMERA VIEW



LEFT SIDE VIEW

FIGURE 28C



OFFSET DEFORMABLE BARRIER ADDITIONAL VEHICLE TARGETING

FIGURE 28D

DATA SHEET 29
CAMERA LOCATIONS

VEH. NHTSA No.: C30104 ; TEST DATE: 11/14/02 ; TIME: 1617

VEH. YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Suburban/MPV

CAMERA NO.	VIEW	CAMERA POSITIONS (mm) *			ANGLE (deg.)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Left Side Panning View	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹	Zoom	34
2	Left Side View (barrier face to front seat backs)	-1000	-8250	-1090	0	8090	25	1000
3	Left Side View (A-post)	-2830	-7585	-1550	-0.5	7104	35	1010
4	Left Side View (B-post aimed toward center of steering wheel)	-5510	-4710	-1970	-10	4040	25	1000
5	Left Side View (B-post)	-3750	-7790	-1470	2	7212	35	1000
6	Left Side View (front door under camera 5)	-2370	-7930	-1180	-1	7445	25	1000
7 ²	Right Side View (overall)	-1730	9130	-1334	-3	8750	13	1000
8	Right Side View (A-post)	-2490	6709	-1579	-2	6154	25	1000
9	Right Side View (B-post-angled)	-6130	4930	-1900	-6	4020	25	1000
10	Right Side View (front door)	-2220	7030	-1180	1	6473	25	1000
11 ²	Front View Windshield	1970	0	-2600	-37	4570	8.5	1000
12 ²	Front View Driver	1990	-255	-2630	-25	4590	25	1000
13 ²	Front View Passenger	1950	250	-2630	-25	4530	25	1000
14 ²	Overhead Barrier Impact View	530	0	-5600	-90	NA ¹	25	1000
15	Pit Camera Engine View	-500	-120	850	90	NA ¹	13	997
16	Pit Camera Fuel Tank View	-2190	-120	1010	90	NA ¹	13	NA ¹

* +X - film plane forward (downstream) from barrier impact surface

+Y - film plane to right of monorail centerline from driver's perspective

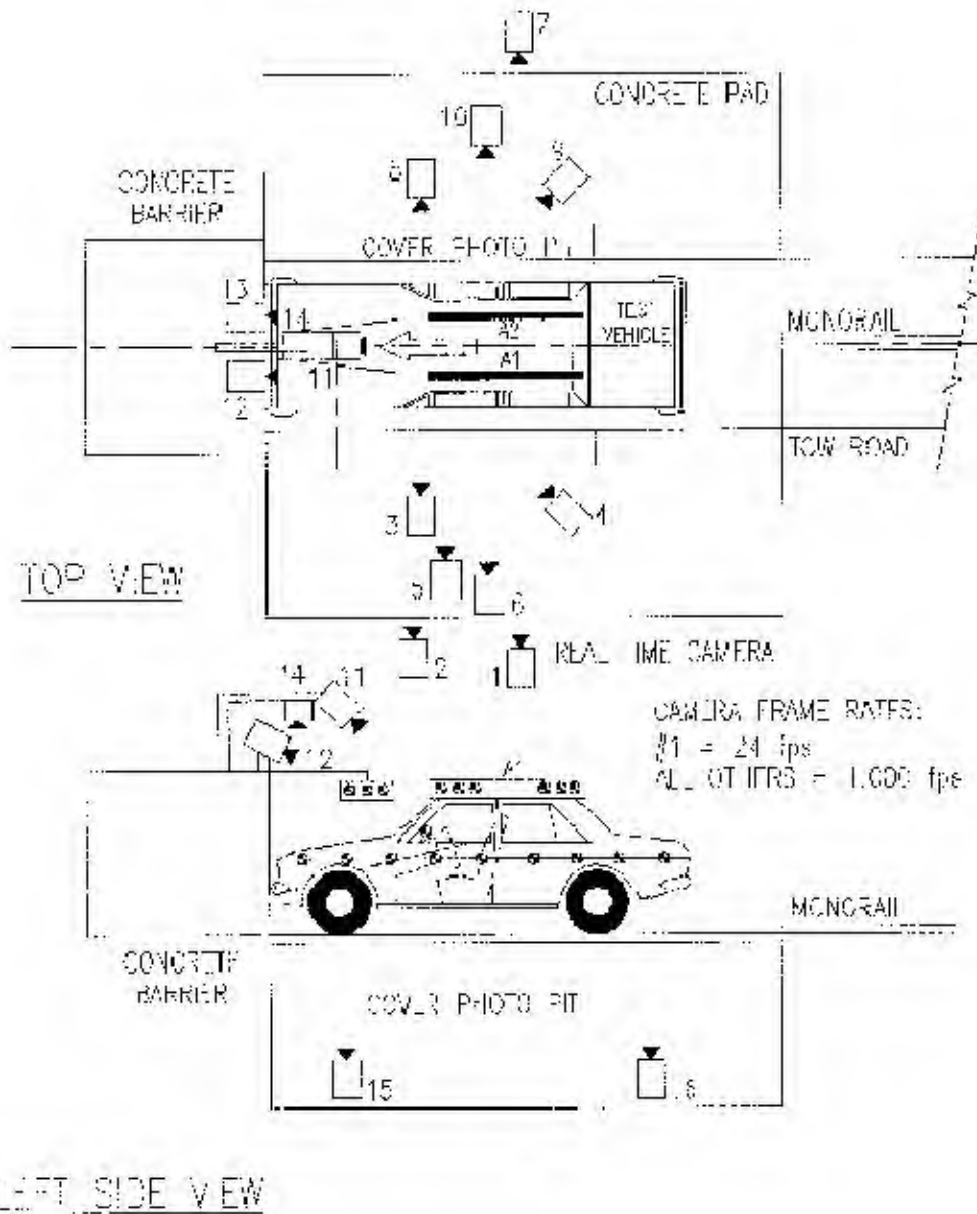
+Z - film plane below ground level

¹ Not applicable

² Digital camera

³ Unable to determine speed, no timing LED's.

CAMERA POSITIONS FOR FRONTAL IMPACTS



DATA SHEET 30 - DRIVER
DUMMY POSITIONING PROCEDURES FOR TEST DUMMY CONFORMING TO
SUBPART O OF PART 572

Seating Procedure 5th Percentile Female Driver Dummy (Part 572, Subpart O)
(S16.2- S16.3)

NHTSA No.: C30104

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): M. Postle

Test Number: 021114

Seat Type: Bench X Bucket Split Bench
(Check One)

1.0 Seat Positioning (S16.2.10)

- X 1.1 Position the seat's adjustable lumbar supports so that the lumbar supports are in the lowest, retracted or deflated adjustment position. (S16.2.10.1)
 X N/A - No lumbar adjustment
- X 1.2 Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 X N/A - No additional support adjustment
- X 1.3 If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 X N/A - No independent fore-aft seat cushion adjustment
- X 1.4 If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 N/A - No independent seat cushion height adjustment.
- X 1.5 Put the seat in its full rearward position. (S16.2.10.3.)
 N/A - the seat does not have a fore-aft adjustment
- X 1.6 If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 X N/A - No seat height adjustment
- X 1.7 Draw a horizontal line on the side of the seat cushion.
- X 1.8 Using only the controls which change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position rearward of the mid-point), and R for full rearward.
 N/A - The seat does not have a fore-aft adjustment.
- X 1.9 Using only the controls which change the seat in the fore-aft direction, place the seat in the full forward position. (S16.2.10.3.2)
 N/A - The seat does not have a fore-aft adjustment.
- X 1.10 If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal. (S16.2.10.3.2)
 N/A - No adjustments
- Angle of the line on side of the seat cushion in the full forward position. 0.3 degrees

- X 1.11 If the seat height is adjustable, determine the maximum and minimum heights. Identify a reference point on the vehicle that does not move with respect to the seat. Identify this point as "S1". Mark a reference point on the seat. Identify this point as "S2". Locate the maximum height, the minimum height and the mid height with respect to the S1 reference point. If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal at all height positions. (S16.2.10.3.3)
- X 1.12 Record the mid height position. (S16.2.10.3.3)
- N/A – No seat height adjustment
- Max. height from S1 117 mm
- Min. height from S1 88 mm
- Test height from S1 102 mm
- Angle of line on seat cushion at test height. 0.3 degrees
- X 1.13 Record the horizontal longitudinal distance between Point S1 and Point S2.
- S1, S2 separation. 5 mm

2.0 Dummy Positioning

- X 2.1 Is the seat a bucket seat? X Yes No
- If yes, go to 2.1.1 and skip 2.1.2. If no, go to 2.1.2 and skip 2.1.1.
- 2.1.1 Bucket seats:
- Locate and mark a vertical plane through the longitudinal centerline of the seat. (S16.3.1.10) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
- Record the width of the seat cushion. 555 mm
- Record the distance from the edge of the seat cushion to the vertical plane. 277.5 mm
- 2.1.2 Bench seats and split bench seats:
- Mark a longitudinal vertical plane that coincides with the center of the steering wheel (S16.3.2.1.4)
- X 2.2 If the vehicle has an adjustable accelerator pedal, place it in the full forward position. (S16.3.2.2.1)
- X N/A accelerator pedal not adjustable
- X 2.3 With the seat in the position from step 1.11, move the seat to the full rearward position using controls that affect the fore and aft position. Do not use height or angle controls. (S16.3.2.1.1)
- X 2.4 Fully recline the seat back. (S16.3.2.1.2)
- N/A seat back not adjustable.
- X 2.5 Place the dummy in the seat with the legs at an angle of 120 degrees to the thighs. The calves should not be touching the seat cushion. (S16.3.2.1.2)
- X 2.6 Position the dummy midsagittal plane vertical and coincident with the seating position centerline. (S16.3.2.1.3)
- X 2.7 Hold down the dummy's thighs and push rearward on the upper torso to maximize the pelvic angle. (S16.3.2.1.6)
- X 2.8 Set the angle between the legs and the thighs to 120 degrees.
- X 2.9 Set the transverse distance between the centers of the front of the knees at 160 to 170 mm. (6.3 to 6.7 inches) Center the knee separation with respect to the seat centerline. (S16.3.2.1.6)
- Record Knee Separation 165 mm
- X 2.10 Push rearward on the dummy's knees until the pelvis contacts the seat back, or the backs of the calves contact the seat cushion, whichever occurs first. (S16.3.2.1.6)
- Pelvis contacted seat back.
- X Calves contacted seat cushion.
- X 2.11 Gently rock the upper torso +/- 5 degrees (approximately 51 mm (2 inches)) side to side three times to reduce the friction between the dummy and the seat. (S16.3.2.1.7)
- X 2.12 If needed, extended the legs until the feet do not contact the floor pan. The thighs should be resting on the seat cushion. (S16.3.2.1.8)
- X 2.13 Position the right foot until the foot is in line with a longitudinal vertical plane passing through the center of the accelerator pedal. Maintain the leg and thigh in a vertical plane. (S16.3.2.1.8)

- ☒ 2.14 Rotate the left leg and thigh laterally to equalize the distance between each knee and the seating position centerline. (S16.3.2.1.8)
- ☒ 2.15 Using only the controls that move the seat fore and aft, attempt to return the seat to the full forward position. The right foot may contact and depress the accelerator and/or change the angle of the foot with respect to the leg. (S16.3.2.1.8)
- ☒ Full forward position achieved. Proceed to step 2.20.
- ☐ Full forward not achieved because of foot interference. Proceed to step 2.17
- ☐ Full forward not achieved because of steering wheel contact.
- ☒ 2.16 If the dummy's legs contact the steering wheel, move the steering wheel up the minimum amount required to avoid contact. If the steering wheel is not adjustable separate the knees the minimum required to avoid contact. (S16.3.2.1.8)
- ☒ N/A- there was no leg contact
- ☐ Steering wheel repositioned
- ☐ Knees separated
- ☒ 2.17 If the left foot interferes with the clutch or brake pedals, rotate the left foot about the leg to provide clearance. If this is not sufficient, rotate the left thigh outboard at the hip the minimum amount required for clearance. (S16.3.2.1.8)
- ☒ N/A No foot interference with pedals.
- ☐ Foot adjusted to provided clearance.
- ☐ Foot and Thigh adjusted to provide clearance.
- ☒ 2.18 Continue to move the seat forward until the full forward position is reached, or until the dummy contacts the interior. If the dummy contacts the interior move the seat rearward until a maximum clearance of 5 mm (0.2 inches) is achieved or the seat is in the closest detent position which does not cause dummy contact. (S16.3.2.1.8)
- ☒ Full Forward reached
- Dummy contact. Clearance set at maximum of 5mm
- Measured Clearance _____
- ☐ Dummy Contact. Seat set at nearest detent position.
- Seat position _____ detent positions rearward of full forward
- (full forward is position zero)
- ☒ 2.19 If the steering wheel was repositioned in step 2.16, return the steering wheel to the original position. If the steering wheel contacts the dummy before reaching the original position, position the wheel until a maximum clearance of 5mm (.2 inches) is achieved, or the steering wheel is in the closest detent position that does not cause dummy contact.
- ☐ N/A Steering wheel was not repositioned.
- ☒ Original position achieved.
- ☐ Dummy contact. Clearance set at maximum of 5mm
- Measured Clearance _____
- ☐ Dummy Contact. Steering wheel set at nearest detent position.
- Steering wheel position _____ detent positions upward of original position.
- (Original position is position zero)
- ☒ 2.20 If the seat back is adjustable, rotate the seat back forward while holding the thighs in place. Continue rotating the seat back forward until the transverse instrument platform of the dummy head is level ± 0.5 degrees. If head cannot be leveled using the seat back adjustment, or the seat back is not adjustable, use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle.
- ☒ Head Level Achieved. (Check all that apply)
- ☒ Head leveled using the adjustable seat back
- ☐ Head leveled using the neck bracket.
- Head Angle 0 degrees
- ☐ Head Level NOT Achieved. (Check all that apply)
- ☐ Head leveled using the adjustable seat back
- ☐ Head leveled using the neck bracket.
- Head Angle _____ degrees
- ☒ 2.21 Verify the pelvis is not interfering with the seat bight.

- ☒ 2.22 Verify the dummy abdomen is properly installed.
- ☒ 2.23 If the dummy torso contacts the steering wheel while performing step 2.20, reposition the steering wheel in the following order to eliminate contact.
- ☒ N/A No dummy torso contact with the steering wheel.
 - ☐ 2.23.1 Adjust telescoping mechanism.
 - ☐ N/A No telescoping adjustment.
 - ☐ Adjustment performed (fill in appropriate change)
 - Steering wheel moved _____ detent positions in the forward direction.
 - Steering wheel moved _____ mm in the forward direction.
 - ☐ 2.23.2 Adjust tilt mechanism.
 - ☐ N/A No tilt adjustment.
 - ☐ No adjustment performed.
 - ☐ Adjustment performed.
 - Steering wheel moved _____ detent positions Upward/Downward. (circle one)
 - Steering wheel moved _____ degrees Upward/Downward
 - ☐ 2.23.3 Adjust Seat in the aft direction.
 - ☐ No Adjustment performed.
 - ☐ Seat moved aft _____ mm from original position.
 - ☐ Seat moved aft _____ detent positions from the original position.
- ☒ 2.24 Measure and set the pelvic angle using the pelvic angle gage 'FF-2504. The pelvic angle should be 20.0 degrees \pm 2.5 degrees. If the pelvic angle cannot be set to 20 degrees, minimize the angular difference.
- ☒ Pelvic angle set to 20.0 degrees \pm 2.5 degrees.
 - ☐ Pelvic angle of 20.0 degrees not achieved, the angular difference was minimized.
 - ☒ Record the pelvic angle. 21.4 _____ degrees
- ☒ 2.25 Check the dummy for contact with interior after completing adjustments.
- ☒ No contact.
 - ☐ Dummy in contact with interior.
 - ☐ Seat moved Aft _____ mm from the previous position.
 - ☐ Seat moved Aft _____ detent positions from the previous position.
- ☒ 2.26 Check the dummy to see if additional interior clearance is obtained, allowing the seat to be moved forward.
- ☒ N/A Seat already at full forward position.
 - ☐ Clearance unchanged. No adjustments required.
 - ☐ Additional clearance available
 - ☐ Seat moved Forward _____ mm from the previous position.
 - ☐ Seat moved Forward _____ detent positions from the previous position.
- ☒ 2.27 Driver's foot positioning, right foot
- ☒ 2.27.1 Place the foot perpendicular to the leg and determine if the right heel contacts the floor pan at any leg position. If the heel contacts the floor pan proceed to step 2.28 otherwise, proceed to step 2.29.
- ☒ 2.28 Perform the following steps until either all steps are completed, or the foot contacts the accelerator pedal. Step 2.28.6 shall be completed in all cases.
- ☒ 2.28.1 With the rear of the heel contacting the floor pan, move the foot forward until pedal contact occurs or the foot is at the full forward position.
 - ☒ 2.28.2 If the vehicle has an adjustable accelerator pedal, move the pedals rearward until pedal contact occurs or the pedals reach the full rearward position.
 - ☐ 2.28.3 Extend the leg, allowing the heel to lose contact with the floor until the foot contacts the pedal. Do not raise the toe of the foot higher than the top of the accelerator pedal. If the foot does not contact the pedal, proceed to the next step. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

- ____ 2.28.4 Angle the foot to achieve contact between the foot and the pedal. If the foot does not contact the pedal, return the foot to the perpendicular orientation. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.
- ____ 2.28.5 Align the center line of the foot in the same horizontal plane as the centerline of the accelerator pedal. Place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.
- X 2.28.6 Record foot position
 - X Pedal Contact achieved. Contact occurred at step 2.28.2
 - X Heel contacts floor pan
 - ____ Heel set ____ mm from floor pan.
 - ____ Pedal Contact not achieved. Heel set ____ mm from the floor pan.

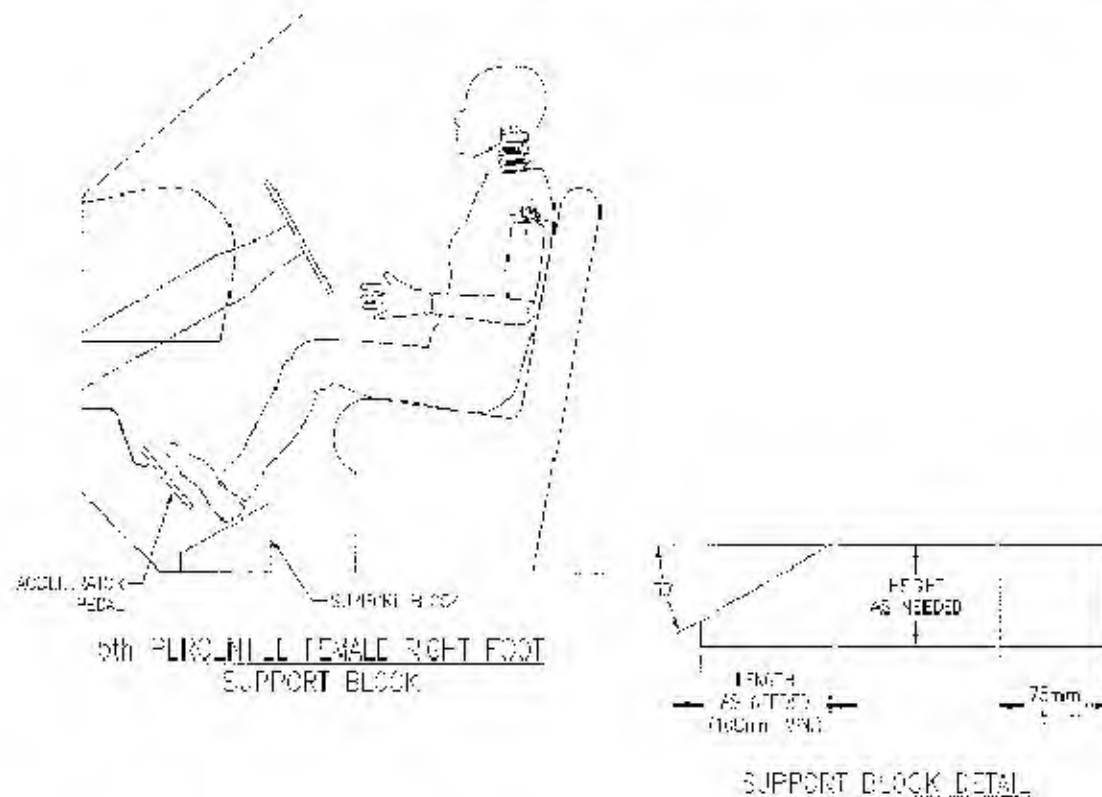


FIGURE G1

- ____ 2.29 Perform the following steps until either all steps are completed, or the foot contacts the accelerator pedal. Step 2.29.5 shall be completed in all cases.
 - ____ 2.29.1 Extend the leg until the foot contacts the pedal. Do not raise the toe of the foot higher than the top of the accelerator pedal. If the foot does not contact the pedal, proceed to the next step. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.
 - ____ 2.29.2 If the vehicle has an adjustable accelerator pedal, move the pedals rearward until pedal contact occurs or the pedals reach the full rearward position. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

- _____ 2.29.3 Angle the foot to achieve contact between the foot and the pedal. If the foot does not contact the pedal, return the foot to the perpendicular orientation. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.
- _____ 2.29.4 Align the centerline of the foot in the same horizontal plane as the centerline of the accelerator pedal. Place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.
- _____ 2.29.5 Record foot position
 _____ Pedal Contact achieved. Contact occurred at step _____.
 _____ Heel set _____ mm from floor pan.
 _____ Pedal Contact not achieved. Heel set _____ mm from the floor pan.
- X 2.30 Driver's foot positioning, left foot.
- X 2.30.1 Place the foot perpendicular to the leg and determine if the left heel contacts the floor pan at any leg position. If the heel contacts the floor pan proceed to step 2.30.2 otherwise, position the leg as perpendicular to the thigh as possible with the foot parallel to the floor pan.
- X 2.30.2 Place the left foot on the toe board with the heel resting on the floor pan as close to the intersection of the floor pan and the toe board as possible. Adjust the angle of the foot if necessary to contact the toe board. If the foot will not contact the toe board, set the foot perpendicular to the leg, and set the heel on the floor pan as far forward as possible. Do not place the foot on the wheel well projection or footrest. If the pedals interfere with the placement of the foot, reposition the foot by rotating the foot about the leg, or rotate the leg outboard about the hip if necessary.
 _____ Foot rotated about the leg
 _____ Foot rotated about the leg, and the leg rotated about the hip.
 X No pedal interference
- X 2.30.3 Record foot position.
 _____ Heel does not contact floor pan.
 _____ Foot placed on toe board.
 X Foot placed on floor pan.
- X 2.31 Driver arm/hand positioning.
- X 2.31.1 Place the dummy's upper arms adjacent to the torso with the arm centerlines as close to a vertical longitudinal plane as possible. (S16.3.2.3.1)
- X 2.31.2 Place the palms of the dummy in contact with the outer part of the steering wheel rim at its horizontal centerline with the thumbs over the steering wheel rim. (S16.3.2.3.2)
- X 2.31.3 If it is not possible to position the thumbs inside the steering wheel rim at its horizontal centerline, then position them above and as close to the horizontal centerline of the steering wheel rim as possible. (S16.3.2.3.3)
- X 2.31.4 Lightly tape the hands to the steering wheel rim so that if the hand of the test dummy is pushed upward by a force of not less than 9 N (2 lb) and not more than 22 N (5 lb), the tape releases the hand from the steering wheel rim. S16.3.2.3.4
- X 2.32 Adjustable head restraints
- X 2.32.1 If the head restraint has an automatic adjustment, leave it where the system positions the restraint after the dummy is placed in the seat. (S16.3.4.1)
 X N/A Vehicle does not contain automatic head restraints.
- X 2.32.2 Adjust each head restraint to its lowest position. (S16.3.4.2)
- X 2.32.3 Measure the vertical distance from the top most point of the head restraint to the bottom most point. Locate a horizontal plane through the midpoint of this distance. Adjust each head restraint vertically so that this horizontal plane is aligned with the center of gravity (CG) of the dummy head. (S16.3.4.3)
 Vertical height of head restraint 205 mm
 Mid-point height _____ mm
- X 2.32.4 If the above position is not attainable, move the vertical center of the head restraint to the closest detent below the center of the head CG. (S16.3.4.3)
 _____ N/A midpoint position attained in previous step
 X Headrest set at nearest detent below the head CG

- X 2.32.5 If the head restraint has a fore and aft adjustment, place the restraint in the forwardmost position or until contact with the head is made, whichever occurs first. (S16.3.4.4) No adjustment
- X 2.33 Driver and passenger manual belt adjustment (for tests conducted with a belted dummy). S16.3.5
- X 2.33.1 If an adjustable seat belt D-ring anchorage exists, place it in the manufacturer's design position for a 5th percentile adult female. This information will be supplied by the COTR.
 Manufacturer's specified position Fixed
-
- Actual Position Fixed Fixed
-
- X 2.33.2 Place the Type 2 manual belt around the test dummy and fasten the latch. (S16.3.5.2)
- X 2.33.3 Ensure that the dummy's head remains as level as possible. (S16.3.5.3)
- X 2.33.4 Remove all slack from the lap belt. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this operation four times. Apply a 9 N (2 lbf) to 18 N (4 lbf) tension load to the lap belt. If the belt system is equipped with a tension-relieving device, introduce the maximum amount of slack into the upper torso belt that is recommended by the manufacturer. If the belt system is not equipped with a tension-relieving device, allow the excess webbing in the shoulder belt to be retracted by the retractive force of the retractor. (S16.3.5.4)

DATA SHEET 30 - PASSENGER
Seating Procedure 5th Percentile Female Passenger Dummy
(Part 572, Subpart O) (S16.2- S16.3)

NHTSA No.: C30104

Test Date: 11/14/02

Laboratory: TRC Inc.

Test Technician(s): M. Postle, B. Miller

Test Number: 021114

Seat Type: Bench ☒ Bucket ☐ Split Bench

1.0 Seat Positioning (S16.2.10)

- ☒ 1.1. Position the seat's adjustable lumbar supports so that the lumbar supports are in the lowest, retracted or deflated adjustment position. (S16.2.10.1)
 ☒ N/A - No lumbar adjustment
- ☒ 1.2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
 ☒ N/A - No additional support adjustment
- ☒ 1.3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
 ☐ N/A - No independent fore-aft seat cushion adjustment
- ☒ 1.4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
 ☒ N/A - No independent seat cushion height adjustment
- ☒ 1.5. If the seat is a bench seat, use the position determined for the driver's side and proceed to Section 2.0.
 ☒ N/A - Seat is not a bench seat.
- ☒ 1.6. Put the seat in its full rearward position. (S16.2.10.3.1)
 ☐ N/A - the seat does not have a fore-aft adjustment
- ☒ 1.7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
 ☒ N/A - No seat height adjustment
- ☒ 1.8. Draw a horizontal line on the side of the seat cushion.
- ☒ 1.9. Using only the controls which change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position rearward of the mid-point), and R for full rearward.
 ☐ N/A - The seat does not have a fore-aft adjustment.
- ☒ 1.10. Using only the controls which change the seat in the fore-aft direction, place the seat in the full forward position. (S16.2.10.3.2)
 ☐ N/A - The seat does not have a fore-aft adjustment.
- ☒ 1.11. If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal. (S16.2.10.3.2)
 ☒ N/A - No adjustments
 Angle of the line on side of the seat cushion in the full forward position. 0.8 degrees
- ☒ 1.12. If the seat height is adjustable, determine the maximum and minimum heights. Identify a reference point on the vehicle that does not move with respect to the seat. Identify this point as "S1". Mark a reference point on the seat. Identify this point as "S2". Locate the maximum height, the minimum height and the mid height with respect to the S1 reference point. If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal at all height positions. (S16.2.10.3.3)

- X 1.13 Record the mid height position of S2. (S16.2.10.3.3)
X N/A - No seat height adjustment
 Max. height from S1 _____
 Min. height from S1 _____
 Test height from S1 _____
 Angle of line on seat cushion at test height, _____ degrees
- ____ 1.14 Record the horizontal longitudinal distance between Point S1 and Point S2.
 S1, S2 separation, _____

2.0 Dummy Positioning

NOTE: Certain steps may need to be performed simultaneously with the positioning of the driver side dummy.

- X 2.1. Is the seat a bucket seat? X Yes ____ No
 If yes, go to 2.1.1 and skip 2.1.2. If no, go to 2.1.2 and skip 2.1.1.
- 2.1.1 Bucket seats:
 Locate and mark a vertical plane through the longitudinal centerline of the seat. (S16.3.3.1.10)
 The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.
 Record the width of the seat cushion. 560 mm
 Record the distance from the edge of the seat cushion to the vertical plane. 280 mm
- 2.1.2 Bench seats and split bench seats:
 Mark a longitudinal vertical plane that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel. (S16.3.3.1.4)
- X 2.3 With the seat in the position from step 1.5 or 1.13, move the seat to the (full) rearward position using controls that affect the fore and aft position. Do not use height or angle controls. (S16.3.3.1.1)
- X 2.4 Fully recline the seat back. (S16.3.3.1.2)
 ____ N/A seat back not adjustable.
- X 2.5 Place the dummy in the seat with the legs at an angle of 120 degrees to the thighs. The calves should not be touching the seat cushion. (S16.3.3.1.3)
- X 2.6 Position the dummy midsagittal plane vertical and coincident with the seating position centerline. (S16.3.3.1.3 or S16.3.3.1.4)
- X 2.7 Hold down the dummy's thighs and push rearward on the upper torso to maximize the pelvic angle. (S16.3.3.1.5)
- X 2.8 Set the angle between the legs and the thighs to 120 degrees. (S16.3.3.1.6)
- X 2.9 Set the transverse distance between the centers of the front of the knees at 160 to 170 mm (6.3 to 6.7 inches). Center the knee separation with respect to the seat centerline. (S16.3.3.1.6)
 Record Knee Separation 165 mm
- X 2.10 Push rearward on the dummy's knees until the pelvis contacts the seat back, or the backs of the calves contact the seat cushion, whichever occurs first. (S16.3.3.1.6)
 ____ Pelvis contacted seat back.
X Calves contacted seat cushion.
- X 2.11 Gently rock the upper torso +/- 5 degrees (approximately 51 mm (2 inches)) side to side three times to reduce the friction between the dummy and the seat. (S16.3.3.1.7)
- ____ 2.12 If needed, extended the legs until the feet do not contact the floor pan. The thighs should be resting on the seat cushion. (S16.3.3.1.8)
- ____ 2.13 If the seat is a bench seat perform the driver dummy setup first and perform only the steps that do not affect the seat position or seat back angle of the driver as indicated. (S16.2.10.3)

- ☒ 2.14 Using only the controls that move the seat fore and aft, move the seat forward until the full forward position is reached, or until the dummy contacts the interior. If the dummy contacts the interior move the seat rearward until a maximum clearance of 5 mm (0.2 inches) is achieved or the seat is in the closest detent position which does not cause dummy contact. (S16.3.3.1.8)
- ☐ N/A Bench Seat
- ☒ Full Forward reached
- ☐ Dummy contact. Clearance set at maximum of 5mm
- Measured Clearance _____ mm
- ☐ Dummy Contact. Seat set at nearest detent position.
- Seat position _____ detent positions rearward of full forward (full forward is position zero)
- ☒ 2.15 If the seat back is adjustable, rotate the seat back forward while holding the thighs in place. Continue rotating the seat back forward until the transverse instrument platform of the dummy head is level ± 0.5 degrees. If head cannot be leveled using the seat back adjustment, or the seat back is not adjustable, use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle. (S16.3.3.1.9 and S16.3.3.1.10) (Check All That Apply)
- ☐ Seat back not adjustable
- ☐ Seat back not independent of driver side seat back
- ☒ Head Level Achieved. (Check all that apply)
- ☒ Head leveled using the adjustable seat back
- ☐ Head leveled using the neck bracket.
- Head Angle 0 degrees
- ☐ Head Level NOT Achieved. (Check all that apply)
- ☐ Head leveled using the adjustable seat back
- ☐ Head leveled using the neck bracket.
- Head Angle _____ degrees
- ☒ 2.16 Verify the pelvis is not interfering with the seat belt. (S16.3.3.1.9)
- ☒ 2.17 Verify the dummy abdomen is properly installed. (S16.3.3.1.9)
- ☒ 2.18 Measure and set the pelvic angle using the pelvic angle gage TE-2504. The pelvic angle should be 20.0 degrees ± 2.5 degrees. If the pelvic angle cannot be set to 20 degrees, minimize the angular difference. (S16.3.3.1.11)
- ☒ Pelvic angle set to 20.0 degrees ± 2.5 degrees.
- ☐ Pelvic angle of 20.0 degrees not achieved, the angular difference was minimized.
- ☒ Record the pelvic angle. 21.3 degrees
- ☒ 2.19 Verify the transverse instrument platform of the dummy head is level ± 0.5 degrees. Use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle. (S16.3.3.1.9, S16.3.3.1.10, and S16.3.3.1.11)
- ☒ Head Level Achieved
- Head Angle 0 degrees
- ☐ Head Level NOT Achieved.
- Head Angle _____ degrees
- ☒ 2.20 Check the dummy for contact with interior after completing adjustments. (S16.3.3.1.12)
- ☐ N/A Bench Seat
- ☒ No contact.
- ☐ Dummy in contact with interior.
- ☐ Seat moved aft _____ mm from previous position.
- ☐ Seat moved aft _____ detent positions from the previous position.
- ☒ 2.21 Check the dummy to see if additional interior clearance is obtained, allowing the seat to be moved forward. (S16.3.3.1.12)
- ☐ N/A Bench Seat
- ☒ N/A Seat already at full forward position.
- ☐ Clearance unchanged. No adjustments required.
- ☐ Additional clearance available
- ☐ Seat moved Forward _____ mm from the previous position.
- ☐ Seat moved Forward _____ detent positions from the previous position.
- ☐ Seat moved Forward. Full Forward position reached.

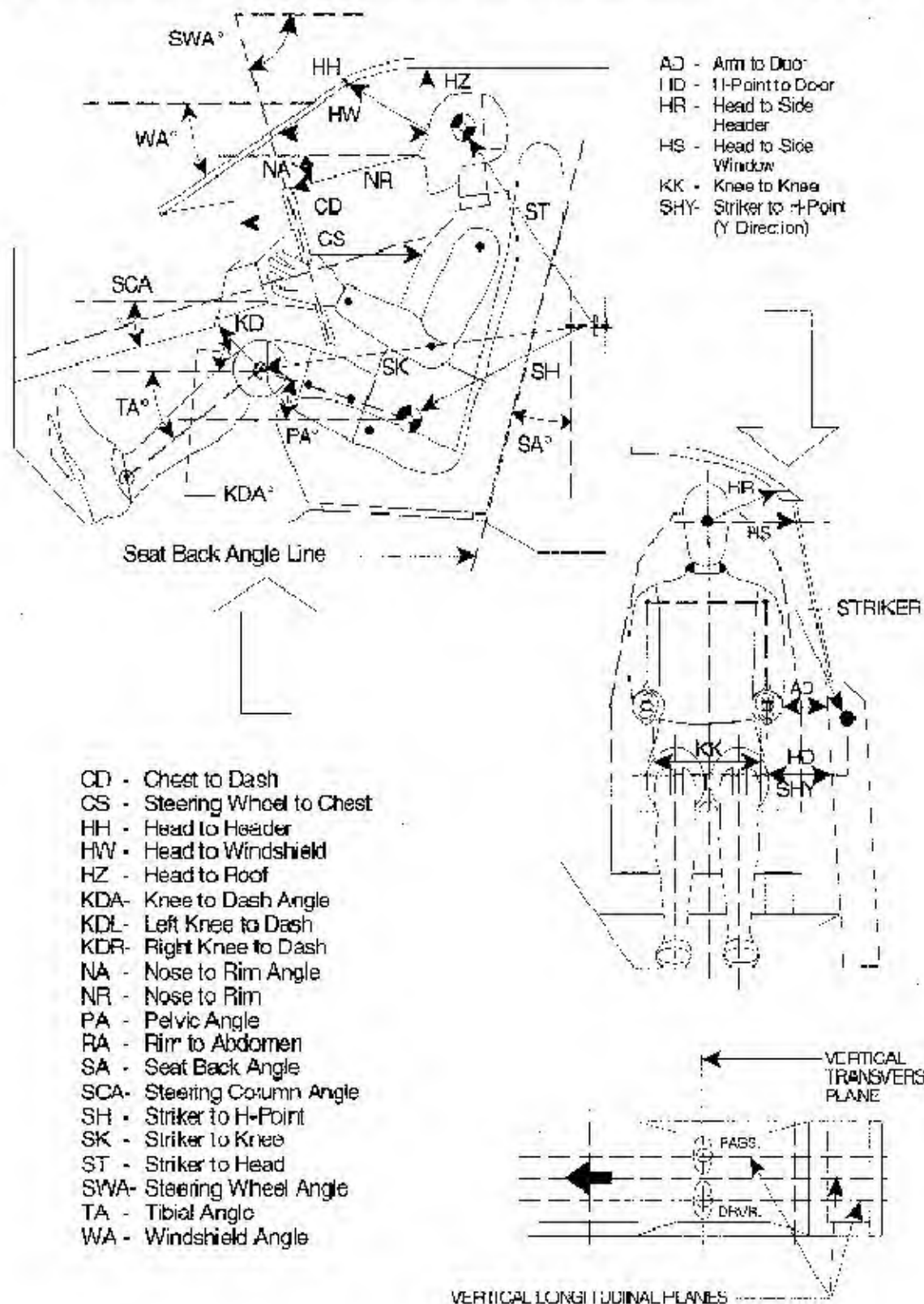
- X 2.22 Passenger foot positioning. (Indicate final position achieved) (S16.3.3.2)
- 2.22.1 Place feet flat on the toe board. OR
- X 2.22.2 If the feet cannot be placed flat on the toe board, set the feet perpendicular to the lower leg, and rest the heel as far forward on the floor pan as possible. OR
- 2.22.3 If the heels do not touch the floor pan, set the legs to vertical and set the feet parallel to the floor pan
- X 2.23 Passenger arm/hand positioning. (S16.3.3.3)
- X 2.23.1 Place the dummy's upper arms adjacent to the torso with the arm centerlines as close to a vertical longitudinal plane as possible. (S16.3.2.3.1)
- X 2.23.2 Place the palms of the dummy in contact with the outer part of the thighs (S16.3.3.3.2)
- X 2.23.3 Place the little fingers in contact with the seat cushion. (S16.3.3.3.3)
- X 2.24 Adjustable head restraints
- 2.24.1 If the head restraint has an automatic adjustment, leave it where the system positions the restraint after the dummy is placed in the seat. (S16.3.4.1)
- X N/A Vehicle does not contain automatic head restraints.
- X 2.24.2 Adjust the head restraint to its lowest position. (S16.3.4.2)
- X 2.24.3 Measure the vertical distance from the top most point of the head restraint to the bottom most point. Locate a horizontal plane through the midpoint of this distance. Adjust the head restraint vertically so that this horizontal plane is aligned with the center of gravity (CG) of the dummy head. (S16.3.4.3)
- Vertical height of head restraint 203 mm
- Mid-point height 101.5 mm
- X 2.24.4 If the above position is not attainable, move the vertical center of the head restraint to the closest detent below the center of the head CG. (S16.3.4.3)
- N/A midpoint position attained in previous step
- X Head rest set at nearest detent below the head CG "Full Down"
- X 2.24.5 If the head restraint has a fore and aft adjustment, place the restraint in the forwardmost position or until contact with the head is made, whichever occurs first. (S16.3.4.4) No adjustment
- X 2.25 Driver and passenger manual belt adjustment (for tests conducted with a belted dummy) S16.3.5
- X 2.25.1 If an adjustable seat belt D-ring anchorage exists, place it in the manufacturer's design position for a 5th percentile adult female. This information will be supplied by the COTR.
- Manufacturer's specified position Fixed
- Actual Position Fixed
- X 2.25.2 Place the Type 2 manual belt around the test dummy and fasten the latch. (S16.3.5.2)
- X 2.25.3 Ensure that the dummy's head remains as level as possible. (S16.3.5.3)
- X 2.25.4 Remove all slack from the lap belt. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this operation four times. Apply a 9 N (2 lbf) to 18 N (4 lbf) tension load to the lap belt. If the belt system is equipped with a tension-relieving device, introduce the maximum amount of slack into the upper torso belt that is recommended by the manufacturer. If the belt system is not equipped with a tension-relieving device, allow the excess webbing in the shoulder belt to be retracted by the retractive force of the retractor. (S16.3.5.4)

DATA SHEET 31
DUMMY POSITIONING MEASUREMENTS

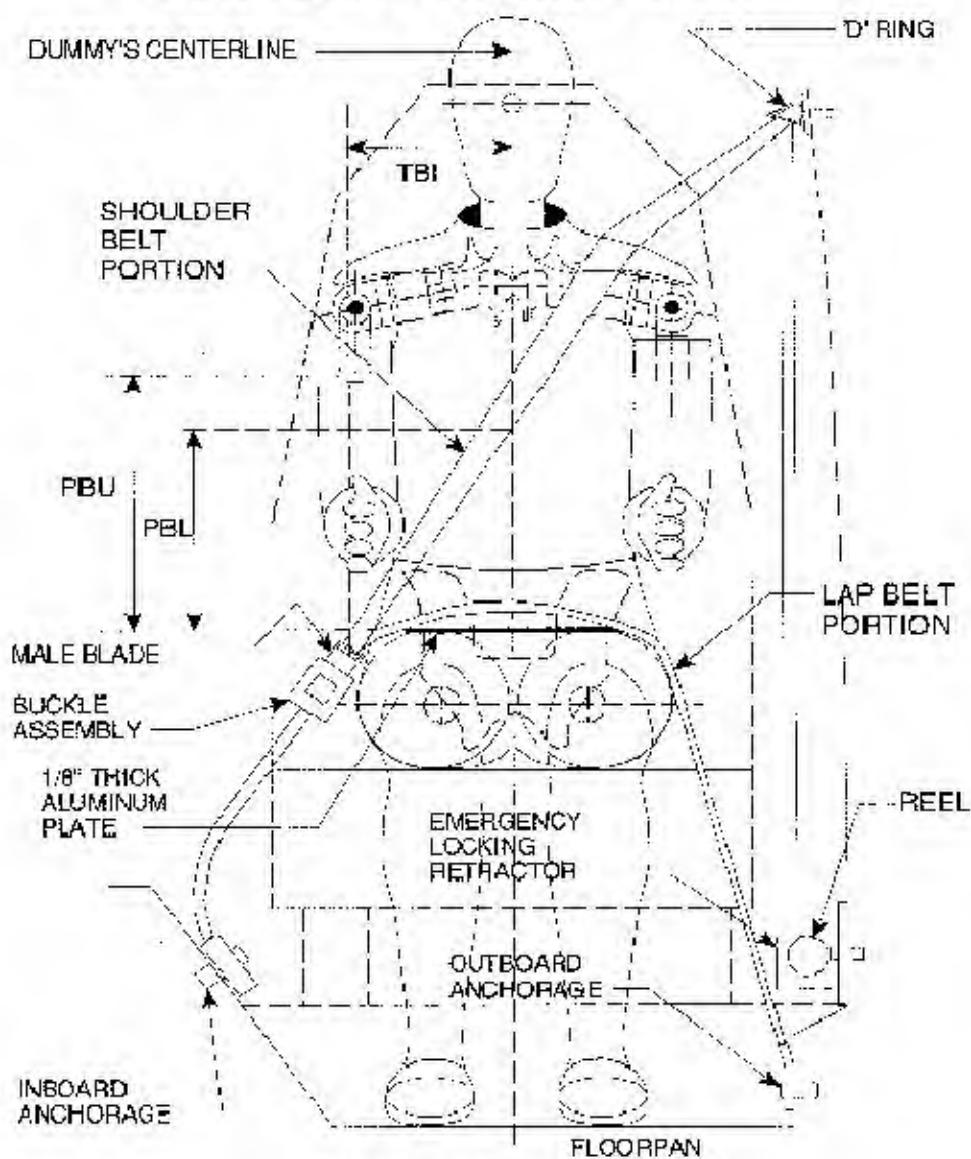
	DRIVER (Serial No. 421)	PASSENGER (Serial No. 426)
WA ¹	40.0	
SWA ⁰	21.1	NA
SCA ⁰	68.9	NA
SA ¹	9.7 ¹	10.4 ¹
HZ	335	345
HH	413	449
HW	671	663
HR	310	300
NR	265 ANGLE 4.0°	NA
CD	475	389
CS	230	NA
RA	99	NA
KDL	95 Angle 61.9°	85 Angle 66.1°
KDR	98	88
PA ⁰	21.6	21.3
TA ⁰	53.9	61.0
KK	230	165
ST	637 ANGLE -55.3°	625 ANGLE -56.6°
SK	800 ANGLE 1.2°	800 ANGLE -0.1°
STJ	470 ANGLE 8.5°	466 ANGLE 11.2°
SHY	245	270
HS	301	275
HD	190	201
AD	175	102

¹ Measured on head restraint post.

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



SEAT BELT POSITIONING DATA



FRONT VIEW OF DUMMY

DESCRIPTIONS OF DUMMY MEASUREMENTS

When a level is to be used, it is to ensure that the line containing the two points described is either parallel or perpendicular to the ground. If a measurement to be made is less than 10 inches ignore the directions to use a level and approximate a level measurement. Also, when a measurement is to be taken to or from the center of a bolt on the dummy, take the measurement from the center of the bolt hole if the bolt is recessed.

The following measurements are to be made within a vertical longitudinal plane.

- * HH Head to Header, taken from the point where the dummy's nose meets his forehead (between his eyes) to the furthest point forward on the header.
- * HW Head to Windshield, taken from the point where the dummy's nose meets his forehead (between his eyes) to a point on the windshield. Use a level.
- HZ Head to Roof, taken from the point where the dummy's nose meets his forehead (between his eyes) to the point on the roof directly above it. Use a level.
- * CS Steering Wheel to Chest, taken from the center of the steering wheel hub to the dummy's chest. Use a level.
- * CD Chest to Dash, place a tape measure on the tip of the dummy's chin and rotate five inches of it downward toward the dummy to the point of contact on the transverse center of the dummy's chest. Measure from this point to the closest point on the dashboard either between the upper part of the steering wheel between the hub and the rim, or measure to the dashboard placing the tape measure above the rim, whichever is a shorter measurement. See photograph.
- RA Steering Wheel Rim to Abdomen, taken from the bottommost point of the steering wheel rim horizontally rearward to the dummy. Use a level.
- NR Nose to Rim, taken from the tip of the dummy's nose to the closest point on the top of the steering wheel rim. Also indicate the angle this line makes with respect to the horizontal (NA).
- *¹ KDL, KDR Left and Right Knees to Dashboard, taken from the center of the knee pivot bolt's outer surface to the closest point forward acquired by swinging the tape measure in continually larger arcs until it contacts the dashboard. Also reference the angle of this measurement with respect to the horizontal for the outboard knee (KDA). See photograph.
- SH, SK, ST Striker to Hip, Knee, and Head, these measurements are to be taken in the X-Z plane measured from the forward most center point on the striker to the center of the H-point, outer knee bolt, and head target. When taking this measurement a firm device that can be rigidly connected to the striker should be used. Use a level. The angles of these measurements with respect to the

* Measurement used in Data Tape Reference Guide

¹ Only outboard measurement is referenced in Data Tape Reference Guide

horizontal should also be recorded. The measurement in the Y (transverse) direction from the striker to the H-point should also be taken (SHY). See photograph.

The following measurements are to be made within a vertical transverse plane.

- HS Head to Side Window, taken from the point where the dummy's nose meets his forehead (between his eyes) to the outside of the side window. In order to make this measurement, roll the window down to the exact height that allows a level measurement. Use a level. See photograph.
- * AD Arm to Door, taken from the outer surface of the elbow pivot bolt on a Hybrid II dummy to the first point it hits on the door. In the case of a Hybrid III dummy, measure from the bolt on the outer biceps. When a SID is used make the measurement from the center of the bottom of the arm segment where it meets the dummy's torso.
- * HD H-point to Door, taken from the H-point on the dummy to the closest point on the door. Use a level.
- * HR Head to Side Header, measure the shortest distance from the point where the dummy's nose meets his forehead (between his eyes) to the side edge of the header just above the window frame, directly adjacent to the dummy.
- SHY Striker to H-point, taken from a rod rigidly connected to the forward most center point on the striker to the H-point. Use a level. See photograph.
- KK Knee to Knee, for Hybrid II dummies measure the distance between knee pivot bolt head outer surfaces. For Hybrid III dummies measure the distance between the outboard knee clevis flange surfaces. (This measurement may not be exactly transverse)

ANGLES

- SA Seat Back Angle, find this angle using the instructions provided by the manufacturer. If the manufacturer doesn't provide clear instructions contact the COTR.²
- PA Pelvic or Femur Angle, taken by inserting the pelvic angle gauge into the H-point gauging hole on the SID or the Hybrid III dummies and taking this angle with respect to the horizontal. Measure the angle of the line connecting the H-point hole and the outer knee pivot bolt hole on a Hybrid II dummy with respect to the horizontal, to find the femur angle.
- SWA Steering Wheel Angle, find this by placing a straight edge against the steering wheel rim along the longitudinal plane. Then measure the acute angle of the straight edge with respect to the horizontal.

* Measurement used in Data Tape Reference Guide

¹ Only outboard measurement is referenced in Data Tape Reference Guide

² For this test, the measurement was taken on head restraint post per COTR.

SCA	Steering Column Angle, measured with respect to the horizontal by placing an inclinometer on the center of the underside of the steering column.
NA	Measure the angle made when taking the measurement NR with respect to the horizontal.
KDA	Knee to Dash Angle, the angle that the measurement KD is taken at with respect to the horizontal. Only get this angle for the outboard knee. See photograph.
WA	Windshield Angle, place an inclinometer along the transverse center of the windshield exterior (measurement is made with respect to horizontal).
TA	Tibia Angle, use a straight edge to connect the dummy's knee and ankle bolts. Then place an inclinometer on the straight edge and measure the angle with respect to the horizontal.

DATA SHEET 32 **CRASH TEST**

NHTSA No.: C30104

Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): M. Postle, B. Miller

Impact Angle: 0° Belled Dummies: X Yes No

Test Speed: 32 to 40 km/h X 0 to 48 km/h 0 to 56 km/h

Driver Dummy: X 5th female 50th male Passenger Dummy: X 5th female 50th male

- X 1. Vehicle underbody painted
- X 2. The speed measuring devices are in place and functioning.
- X 3. The speed measuring devices are 1.5 m from the barrier (spec. 1.5m) and 30 cm from the barrier (spec. is 30 cm)
- X 4. Convertible top is in the closed position.
X N/A – Not a convertible
- X 5. Instrumentation and wires are placed so the motion of the dummies during impact is not affected.
- X 6. Tires inflated to pressure on tire placard or if it does not have a tire placard because it is not a passenger car, then inflated to the tire pressure specified in the owner information.
241 kPa front left tire 240 kPa specified on tire placard or in owner information
241 kPa front right tire 240 kPa specified on tire placard or in owner information
241 kPa rear left tire 240 kPa specified on tire placard or in owner information
241 kPa rear right tire 240 kPa specified on tire placard or in owner information
- X 7. Time zero markers and switches in-place.
- X 8. Pre test zero and shunt calibration adjustments performed and recorded
- X 9. Dummy temperature meets requirements of section 12.2 of the test procedure.
- X 10. Vehicle hood closed and latched
- X 11. Transmission placed in neutral
- X 12. Parking brake off
- X 13. Ignition in the ON position
- X 14. Doors closed and latched but not locked.
- X 15. Posttest zero and shunt calibration checks performed and recorded
- X 16. Actual test speed 40.0 km/h
- X 17. Vehicle rebound from the barrier NA cm
- X 18. Describe whether the doors open after the test and what method is used to open the doors.
Left front door Easy
Right front door Easy
Left rear door Easy
Right rear door Easy
- X 19. Describe the contact points of the dummy with the interior of the vehicle.
Driver dummy Head contacted steering wheel and head restraint, Abdomen contacted steering wheel. Both knees contacted knee bolster.
Passenger dummy Head contacted grab handle on instrument panel and head restraint. Both knees contacted the glove box.

DATA SHEET 33
Offset Deformable Barrier Test Using Belted 5th Percentile Female Dummies
(Part 572, Subpart O) (S18)

NHTSA No.: C30104 Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): M. Postle

Test Number: 021114 Barrier Serial Number: 053 A0402/098B0502

Driver Dummy Serial Number: 421 Passenger Dummy Serial Number: 426

Vehicle Speed X 40 km/h Offset 40 Percent

1.0 Pre-Test Activities

X 1.1 Complete the following data sheets

- X 1.1.1 Vehicle Receiving and Inspection
- X 1.1.2 Vehicle Weight, Fuel Tank, and Attitude
- X 1.1.3 Vehicle Accelerometer Location
- X 1.1.4 General Test Vehicle Data
- X 1.1.5 Photographic Targets
- X 1.1.6 Camera Locations
- X 1.1.7 5th Percentile Female Dummy Calibration
- X 1.1.8 Appendix G 5th Percentile Female Dummy Seating and Positioning Procedure

X 1.2 Barrier Certification

- X 1.2.1 Verify the offset deformable barrier materials and construction are certified to Subpart C of 49 CFR 587. (Attach vendor certification sheets to this data sheet.)

X 1.3 Verify barrier measurements and complete the table below. (See Figure 1)

	Specified Dimension in mm +/- 2.5 unless specified	Measured Dimension in mm
Main Body Height RH Side	650	650
Main Body Height LH Side	650	651
Floor to Lower Barrier LH	200 +/- 15	200
Floor to Lower Barrier RH	200 +/- 15	203
Main Body Width	1000	999
Bumper Element Width	1000	1000
Bumper Element Height LH	330	329
Bumper Element Height RH	330	330
Main Body Depth LH	450	451
Main Body Depth RH	450	450
Bumper Element Depth LH	90	90
Bumper Element Depth RH	90	91
Upper Slot Location	220	221
Lower Slot Location	110	108
Upper Slot Width	4mm Max	3
Lower Slot Width	4mm Max	3

- X 1.3.1 All Dimensions within specified tolerance
- X Yes

- X Post test fuel filler cap view
- X Post test front underbody view
- X Post test rear underbody view
- X Post test driver dummy position with the door open and with the camera perpendicular to the longitudinal centerline of the vehicle and in line with the markings showing the fore-aft position of the seat.
- X Frontal post test driver dummy position with the camera in the same plane as the longitudinal centerline of the dummy.
- X Post test passenger dummy position with the door open and with the camera perpendicular to the longitudinal centerline of the vehicle and in line with the markings showing the fore-aft position of the seat
- X Frontal post test passenger dummy position view with the camera in the same plane as the longitudinal centerline of the dummy.
- X Dummy contact point(s) (vehicle and dummy)
- X Post test view of the knee bolsters.
- Post test view of the steering column shear capsule if any part of it is visible. Do NOT disassemble any parts to take these photographs.
- X Post test under hood view of the steering column intersecting the fire wall. Take the best photograph possible without removing any parts.
- X Post test view of the steering column intersecting the fire wall from inside the vehicle. Take the best photograph possible without removing any parts.
- Post test Stoddard solvent spillage location view, if required.
- Post test electrolyte spillage location view, if required.
- X Post test top view of test vehicle while vehicle is on static rollover machine. (If applicable)
- X 3.2 Process data channels per section 11.14 and record injury values in the Table.

	FMVSS 208 Maximum Allowable Injury Assessment Value	Measured Value Driver Dummy Serial No. 421	Measured Value Passenger Dummy Serial No. 426
HIC ₁₅	700	262	290
Chest Acceleration	60 g	20.2 g	22.8 g
Chest Displacement	52 mm	20 mm	13 mm
Peak Nij (Nte)	1.0	0.40	0.35
Time (ms)	NA	125.76 ms	121.68 ms
Peak Nij (Ntf)	1.0	0.08	0.28
Time (ms)	NA	147.20 ms	147.92 ms
Peak Nij (Nee)	1.0	0.02	0.03
Time (ms)	NA	43.36 ms	58.80 ms
Peak Nij (Nef)	1.0	0.10	0.28
Time (ms)	NA	200.16 ms	150.48 ms
Neck Tension (Fz)	2620 N	782 N	1059 N
Neck Compression (Fz)	2520 N	140 N	55 N
Left Femur Compression	6805 N	3320 N	1398 N
Right Femur Compression	6805 N	1241 N	1244 N

All injury Criteria within limits

- X Pass
- Fail

- X 3.3 Perform post-test calibration check.



OFFSET FRONTAL BARRIER CERTIFICATION

Date: October 31, 2002
To: Transportation Research
Ship & Rec Bldg 50
10820 St. Route 347
East Liberty, OH 43319-0367

PURCHASE ORDER INFORMATION

Customer P.O. Number: VERBAL
Work Order Number: 14853
Quantity: 01 piece

CORE INFORMATION

Core Type: PCGA-1.8-3/4-P-3003-T
Cell Size: 0.750 inches
Density: 1.8 pcf

Unit Number: 098B0502

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 49.59 psi $\pm 0, \pm 10\%$ per DWG #WG11.


Quality Control Representative
Karl D. Zwaanstra





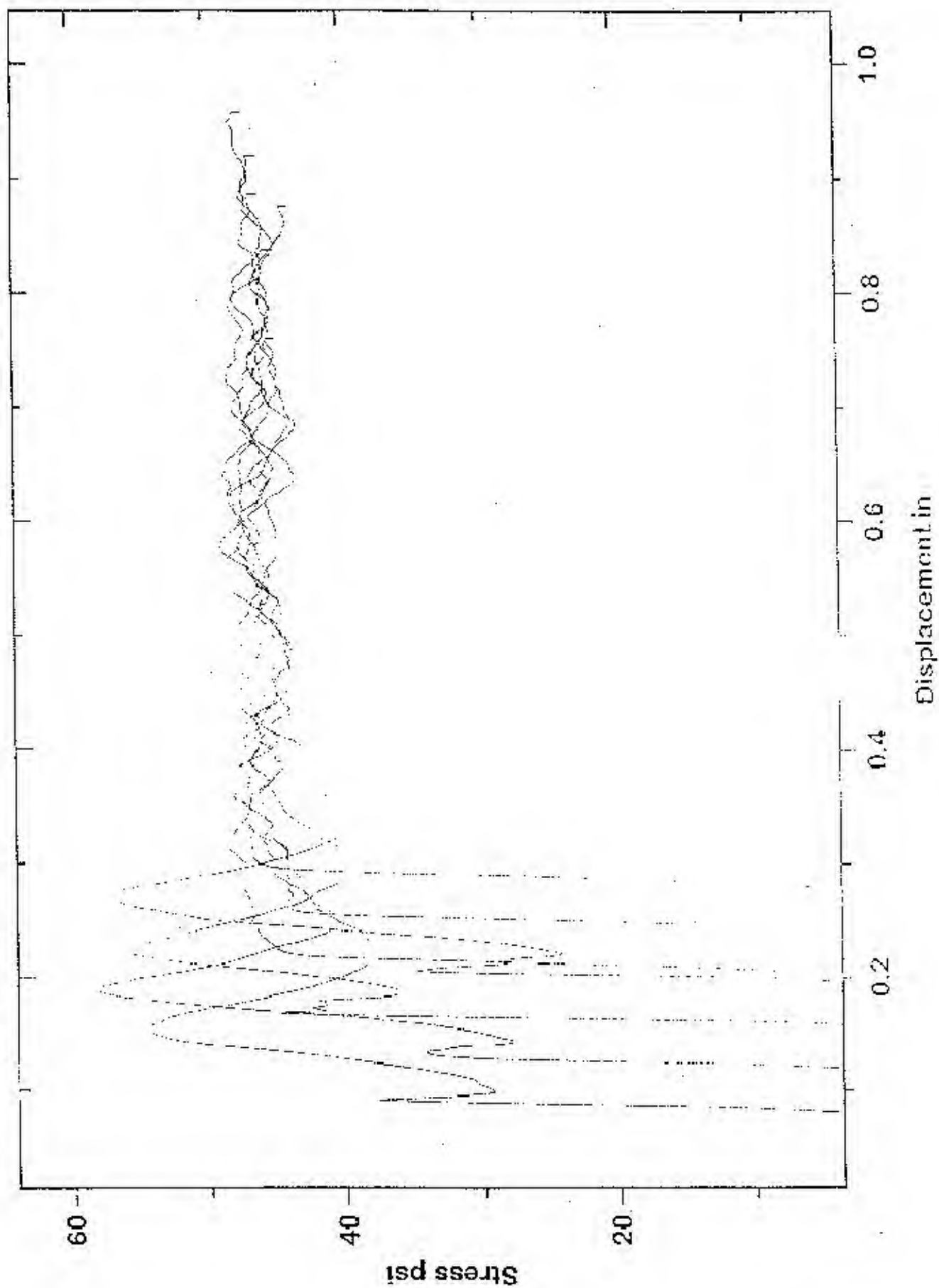
Crush Data

49.59 psi +0, -10% psi per DWG #WG11

Block Number: 098B0502

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	45.28	45.24	45.69
2	45.08	47.31	47.26
3	45.00	46.16	47.63
4	45.03	45.79	46.73
5	47.14	46.94	45.42
6	46.56	45.58	45.50
7	46.04	46.08	46.10

BLOCK # 098B0502 Sample ID: IN224500



OFFSET FRONTAL BARRIER CERTIFICATION

Date: October 31, 2002

To: Transportation Research
Ship & Rec Bldg 50
10820 St. Route 347
East Liberty, OH 43319-0367

PURCHASE ORDER INFORMATION

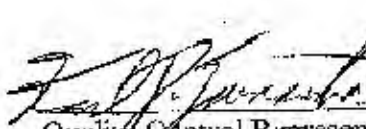
Customer P.O. Number: VERBAL
Work Order Number: 14853
Quantity: 01 piece

CORE INFORMATION

Core Type: PCGA-1/4-5.2-P-3003-T
Measured Cell Size: 0.250 inches
Measured Density: 5.2 pcf

Unit Number: 053A0402

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 248.1 psi ± 10 , $\pm 10\%$ psi per DWG #WG11.


Quality Control Representative
Karl D. Zwaanstra





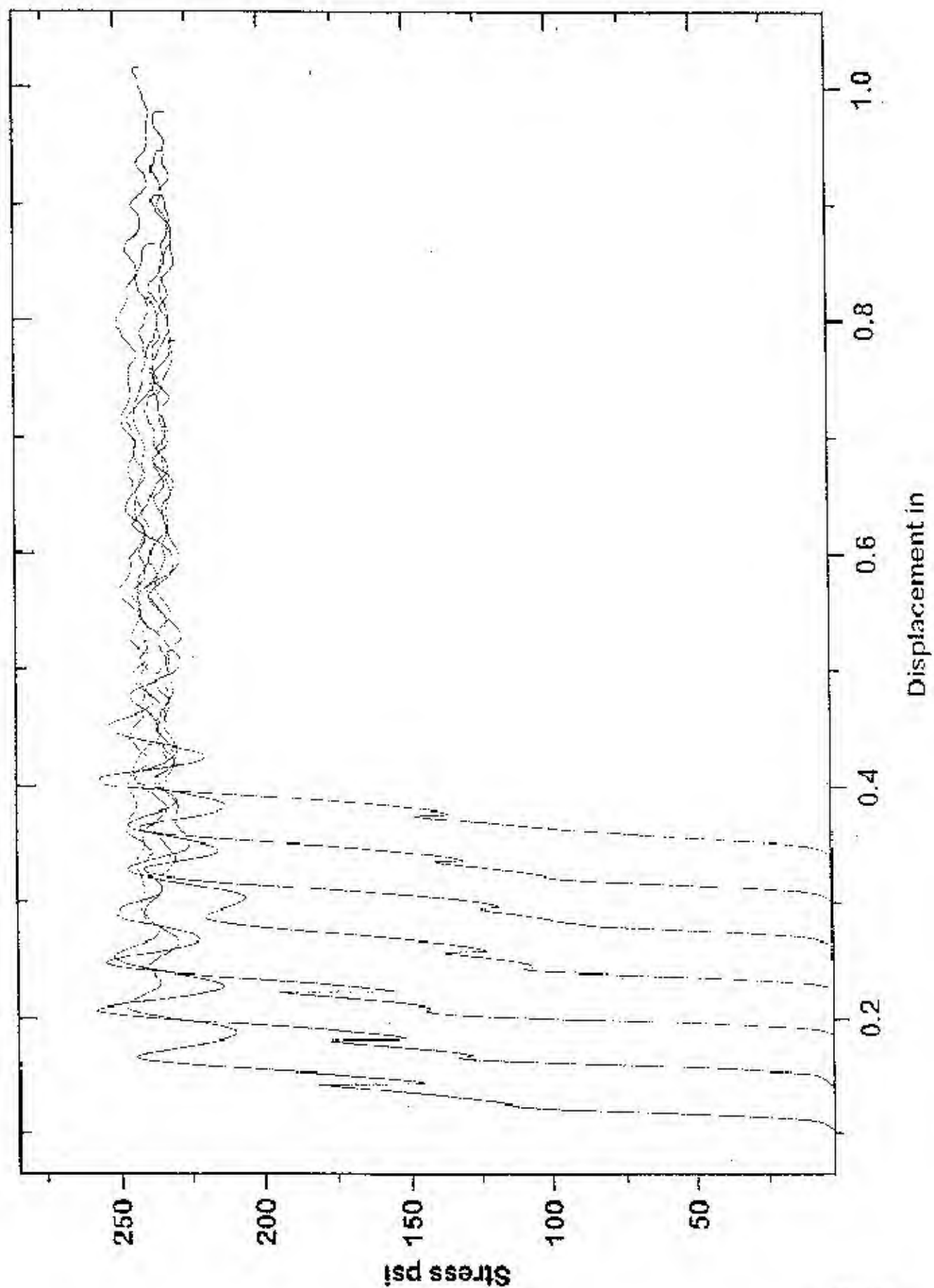
Crush Data

248.1 psi +0, -10% psi per DWG #WG11

Block Number: 053A0402

<u>Specimen Number</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
1	234.32	234.34	233.15
2	240.03	241.88	241.78
3	241.42	241.30	239.35
4	232.07	233.20	233.82
5	238.06	236.19	233.80
6	235.70	233.91	233.08
7	244.58	245.55	241.24

BLOCK # 053A0402 Sample ID: IN224182



DATA SHEET 34
ACCIDENT INVESTIGATION MEASUREMENTS

NHTSA No.: C30104 Test Date: 11/11-14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides, K. Watkins, S. Sterling

Impact Angle: 0° Belted Dummies: X Yes No

Test Speed: 32 to 40 km/h X 0 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: X 5th female 50th male Passenger Dummy: X 5th female 50th male

Vehicle Year/Make/Model/Body Style: 2003/Chevrolet/Suburban/MPV

VIN: 3GNEC16Z53G108730

Wheelbase: 3300; Build Date: 08/02

Veh. Size Category: MPV; Test Weight: 2684.3

Front Overhang: 926; Overall Width: 1994

Veh. Impact Speed: 40.0; Vel. Change:* 49.8

Collision Deformation Classification (CDC) Code: 12FYEW2

* From integration of Left Rear Seat Crossmember X-axis acceleration.

Impact Mode: 40% Offset

Crush Depth Dimensions:

C1 = 450 mm

C2 = 374 mm

C3 = 419 mm

C4 = 189 mm

C5 = -29 mm

C6 = -191 mm

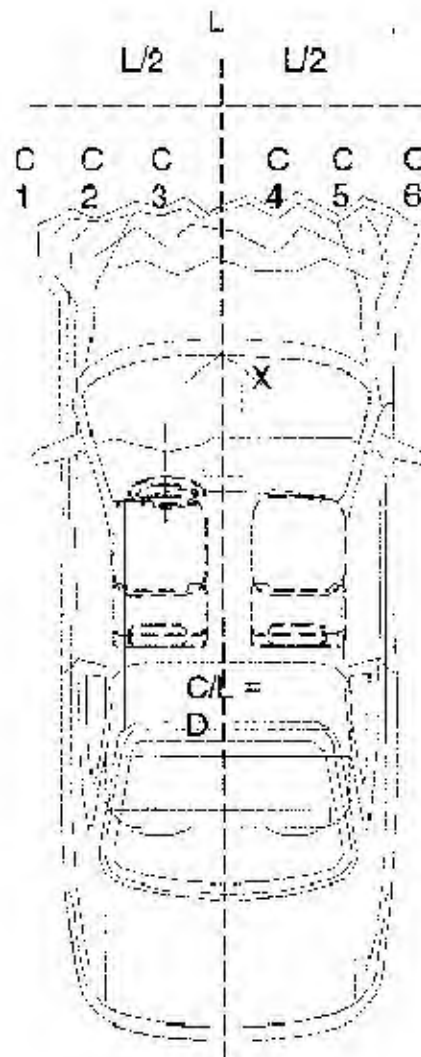
Midpoint of Damage: D= -599

(Left from Vehicle Longitudinal Centerline)

Length of Damage Region:

L = 1830 mm

REMARKS:



DATA SHEET 35 **WINDSHIELD MOUNTING (FMVSS 212)**

NHTSA No.: C30104

Test Date: 11/12-14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides, M. Postle

Impact Angle: 0° Belted Dummies: X Yes No

Test Speed: 32 to 40 km/h X 0 to 40 km/h 0 to 48 km/h 0 to 56 km/h

Driver Dummy: X 5th female 50th male Passenger Dummy: X 5th female 50th male

Most vehicle windshields are either bonded in place and covered with chrome or plastic strips or they are held to the body by a rubber retainer. It is difficult to determine the exact periphery of the windshield because the glazing edge is hidden from view. The test engineer will measure the perimeter inside the retainer or molding at several locations. After the impact test the covering over the glazing edge may be removed for exact measurement of the windshield periphery. Do not disturb the molding or retainer in the event of a noncompliance.

- X 1. Describe from visual inspection how the windshield is mounted and describe any trim material.

Plastic trim all around the windshield, held by adhesive

- X 2. Mark the longitudinal centerline of the windshield.

- X 3. Measure pre-crash A, B, and C for the left side and record in the chart below.

- X 4. Measure pre-crash D, E, and F for the right side and record in the chart below.

- X 5. Measure from the edge of the retainer or molding to the edge of the windshield.

Dimension G: 18 mm

- X 6. Can a single thickness of copier type paper (as small a piece as necessary) slide between the windshield and the vehicle body?

X No, Pass - Skip to the table, complete it by repeating the pre-crash measurements in the post-crash column, and calculate the retention percentage which will be 100%.

 Yes, go to 7.

7. Visibly mark the beginning and end of the portions of the periphery where the paper slides between the windshield and the vehicle body.

8. Measure and record post-crash A, B, C, D, E, and F such that the measurements do not include any of the parts of the windshield where the paper slides between the windshield and the vehicle body.

9. Calculate and record the percent retention for the right and left side of the windshield.

10. Is total right side percent retention less than 75%?

 Yes, **FAIL**

 No, Pass

11. Is total left side percent retention less than 75%?

 Yes, **FAIL**

 No, Pass

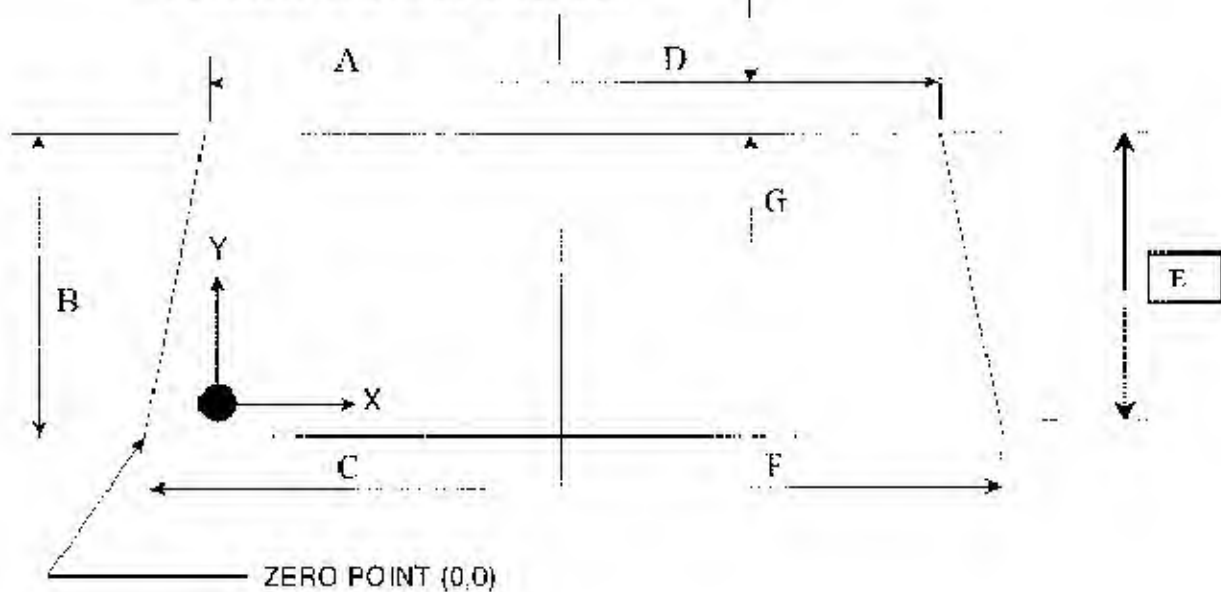
WINDSHIELD PERIPHERY MEASUREMENT

	Dimension	Pre-crash mm	Post-crash mm	Percent Retention (Post-crash ÷ Pre-crash)
Left side	A	698	698	100
	B	670	670	
	C	876	876	
	Total	2244	2244	
Right side	D	698	698	100
	E	670	670	
	F	876	876	
	Total	2244	2244	

Indicate area of mounting failure: None

FRONT VIEW OF WINDSHIELD

INDICATE WIDTH OF MOLDING



DATA SHEET 36 **WINDSHIELD ZONE INTRUSION (FMVSS 219)**

NHTSA No.: C30104 Test Date: 11/11-14/02

Laboratory: TRC Inc. Test Technician(s): B. Miller, D. Summers, M. Postle

Impact Angle: 0° Belted Dummies: X Yes No

Test Speed: 32 to 40 km/h X 0 to 40 km/h 0 to 48 km/h 0 to 56 km/h

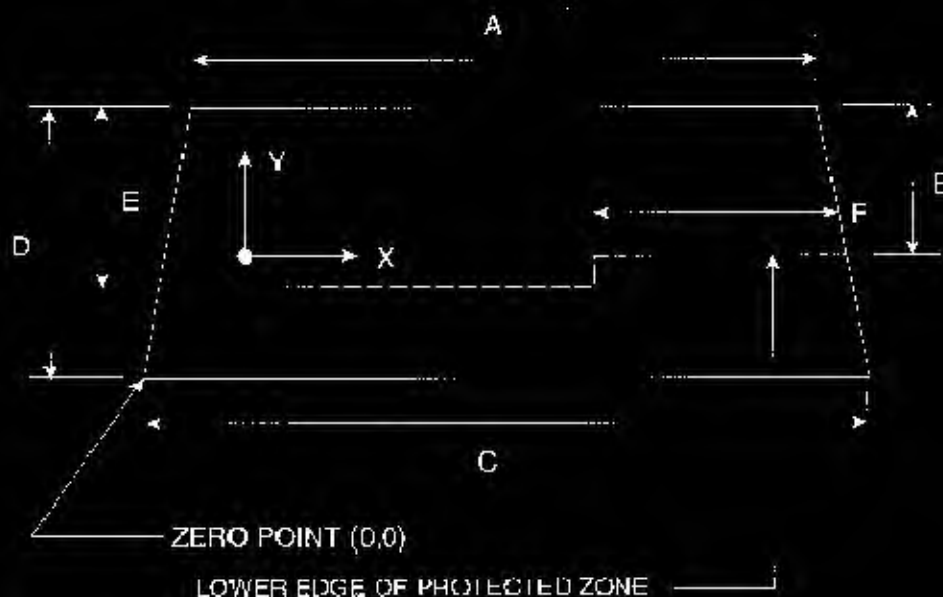
Driver Dummy: X 5th female 50th male Passenger Dummy: X 5th female 50th male

- X 1. Place a 165 mm diameter rigid sphere, with a mass of 6.8 kg on the instrument panel so that it is simultaneously touching the instrument panel and the windshield. (571.219 S6.1(a))
- X 2. Roll the sphere from one side of the windshield to the other while marking on the windshield where the sphere contacts the windshield. (571.219 S6.1(b))
- X 3. From the outermost contactable points on the windshield draw a horizontal line to the edges of the windshield. (571.219 S6.1(h))
- X 4. Draw a line on the inner surface of the windshield that is 13 mm below the line determined in items 2 and 3.
- X 5. After the crash test, record any points where a part of the exterior of the vehicle has marked, penetrated, or broken the windshield.

SKETCH OF FRONT VIEW OF WINDSHIELD:

Provide all dimensions necessary to reproduce the protected area.

FRONT VIEW OF WINDSHIELD



A. Windshield Dimensions

A	B	C	D	E	F
1397	360	1753	670	485	935

AREA OF PROTECTED ZONE FAILURES:

- B. Provide coordinates of the area that the protected zone was penetrated more than 0.25 inches by a vehicle component other than one which is normally in contact with the windshield.

X	Y

- C. Provide coordinates of the area beneath the protected zone template that the inner surface of the windshield was penetrated by a vehicle component

X	Y

REMARKS: No penetration in or beneath the protected zone.

DATA SHEET 37
FUEL SYSTEM INTEGRITY (FMVSS 301)

TEST VEHICLE NHTSA NO.: C30104 ; TEST DATE: 11/14/02

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: M. Postle

TYPE OF IMPACT: 40 % Offset

STODDARD SOLVENT SPILLAGE MEASUREMENT:

A. From impact until vehicle motion ceases —

Actual = 0 grams. (Maximum Allowable = 28 grams)

B. For 5 minute period after vehicle motion ceases —

Actual = 0 grams. (Maximum Allowable = 142 grams)

C. For next 25 minutes —

Actual = 0 grams. (Maximum Allowable = 28 grams/minute)

D. Provide Spillage Details: None

REMARKS: Test time to start of rollover was 57 minutes; no spillage occurred during the interval.

FMVSS 301 STATIC ROLLOVER DATA SHEET

A. TEST PHASE = 0° TO 90°

Determination of Stoddard
Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time =
1 minutes, 30 seconds

(Specified Range is 1 to 3 minutes)

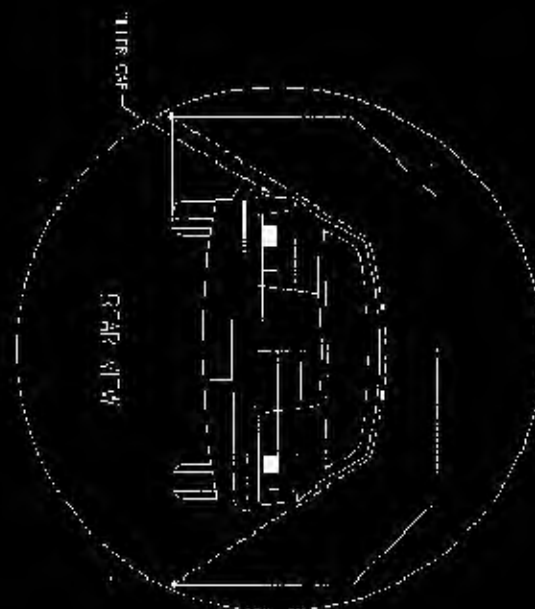
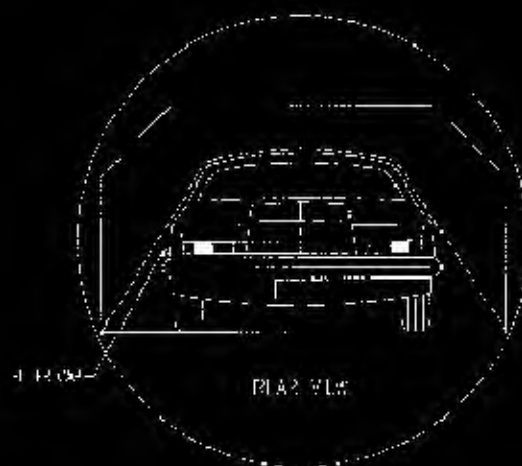
2. FMVSS 301 Position Held
Time = 5 minutes, 0 seconds

3. TOTAL = 6 minutes, 30 seconds

4. NEXT WHOLE MINUTE INTERVAL =
7 minutes

Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 minutes from onset of
rotation = 0 grams
(142 grams allowed)
2. 6th minute = 0 grams
(28 grams allowed)
3. 7th minute = 0 grams
(28 grams allowed)
4. 8th minute (if required) = NA grams
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations - None

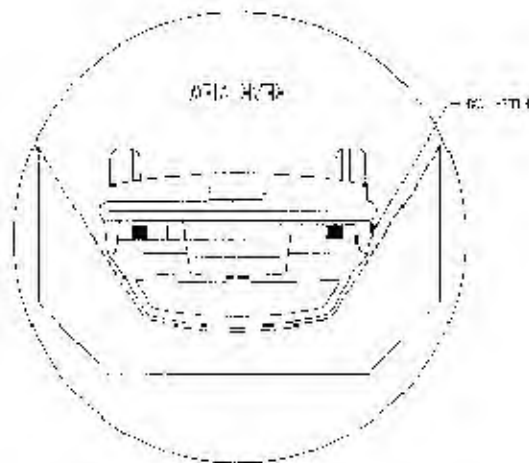
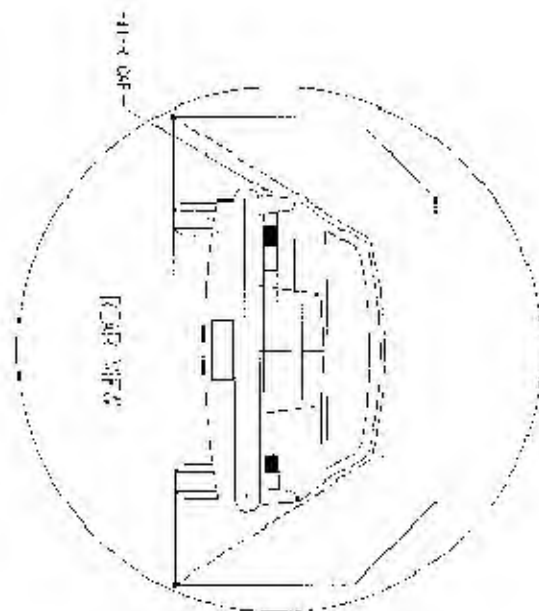
B. TEST PHASE – 90° TO 180°

Determination of Stoddard
Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time =
1 minutes, 30 seconds
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold
Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL –
7 minutes

Actual Test Vehicle Stoddard
Solvent Spillage:

1. First 5 minutes from onset of
rotation = 0 grams
(142 grams allowed)
2. 6th minute = 0 grams
(28 grams allowed)
3. 7th minute = 0 grams
(28 grams allowed)
4. 8th minute (if required) – NA grams
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations – None

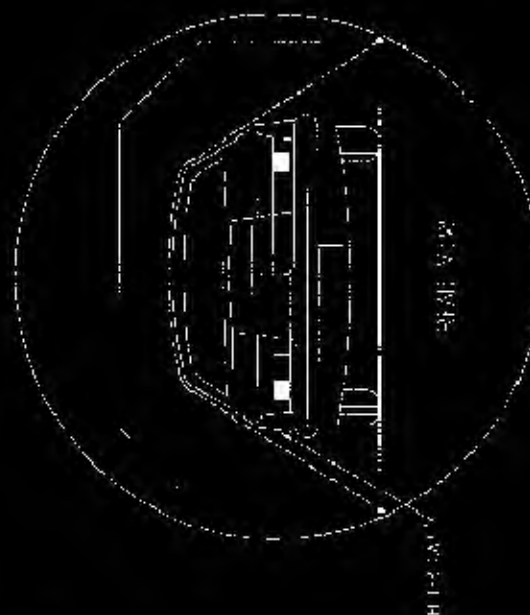
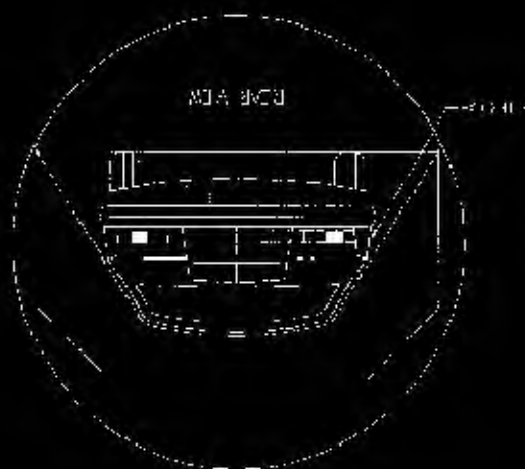
C. TEST PHASE = 180° TO 270°

Determination of Stoddard
Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time =
1 minutes, 30 seconds
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold
Time = 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL =
7 minutes

Actual Test Vehicle Stoddard
Solvent Spillage:

1. First 5 minutes from onset of
rotation = 0 grams
(142 grams allowed)
2. 6th minute = 0 grams
(28 grams allowed)
3. 7th minute = 0 grams
(28 grams allowed)
4. 8th minute (if required) = NA grams
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations - None

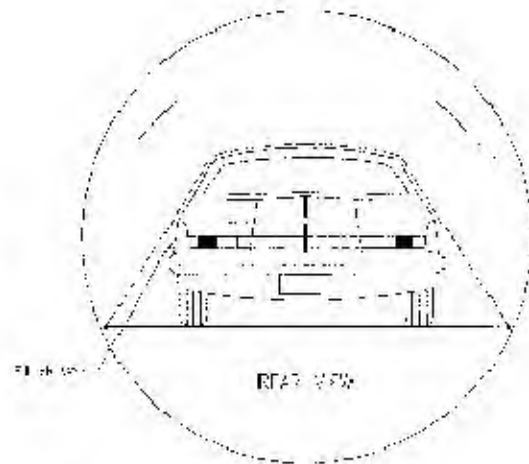
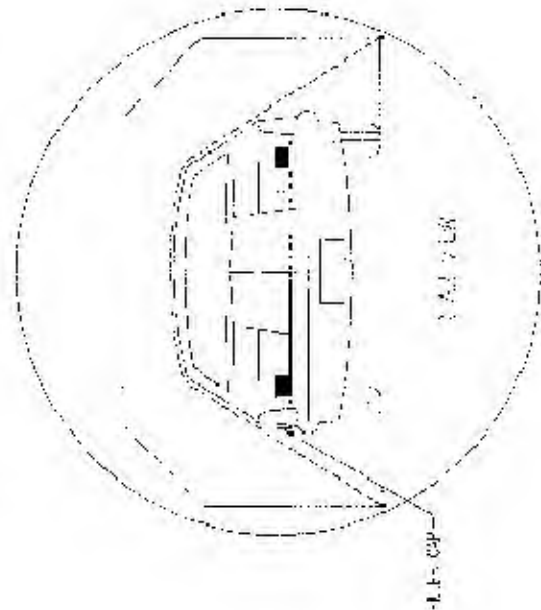
D. TEST PHASE = 270° TO 360°

Determination of Stoddard
Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time –
1 minutes, 30 seconds
(Specified Range is 1 to 3 minutes)
2. FMVSS 301 Position Hold
Time – 5 minutes, 0 seconds
3. TOTAL = 6 minutes, 30 seconds
4. NEXT WHOLE MINUTE INTERVAL =
7 minutes

Actual Test Vehicle Stoddard
Solvent Spillage:

1. First 5 minutes from onset of
rotation = 0 grams
(142 grams allowed)
2. 6th minute = 0 grams
(28 grams allowed)
3. 7th minute = 0 grams
(28 grams allowed)
4. 8th minute (if required) = NA grams
(28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations - None

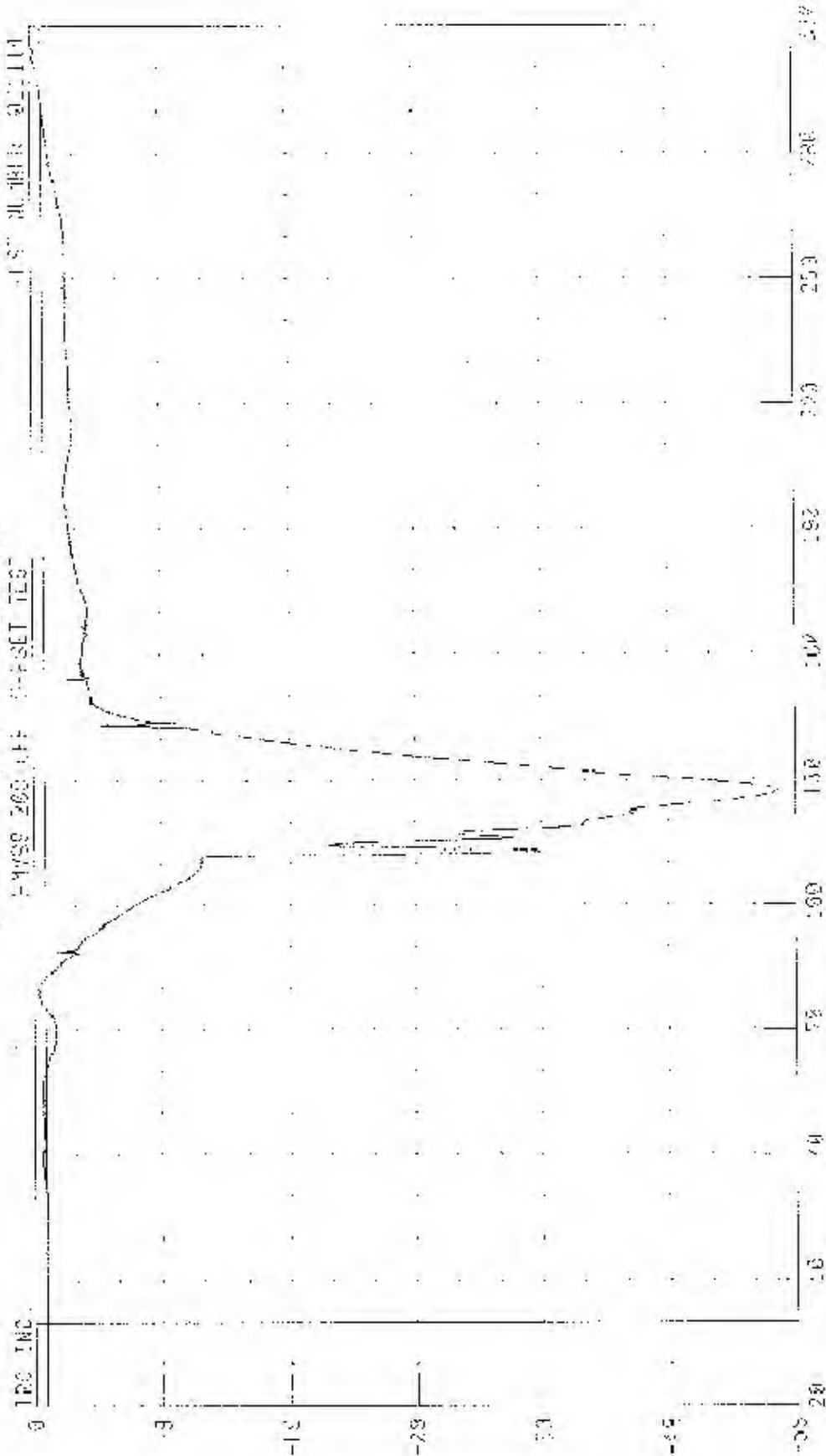
Section 6

Test Data

COLLECTOR'S COPY

10-15-2017

1992 200 44



CHINESE
FIFTH CLASS

[6]

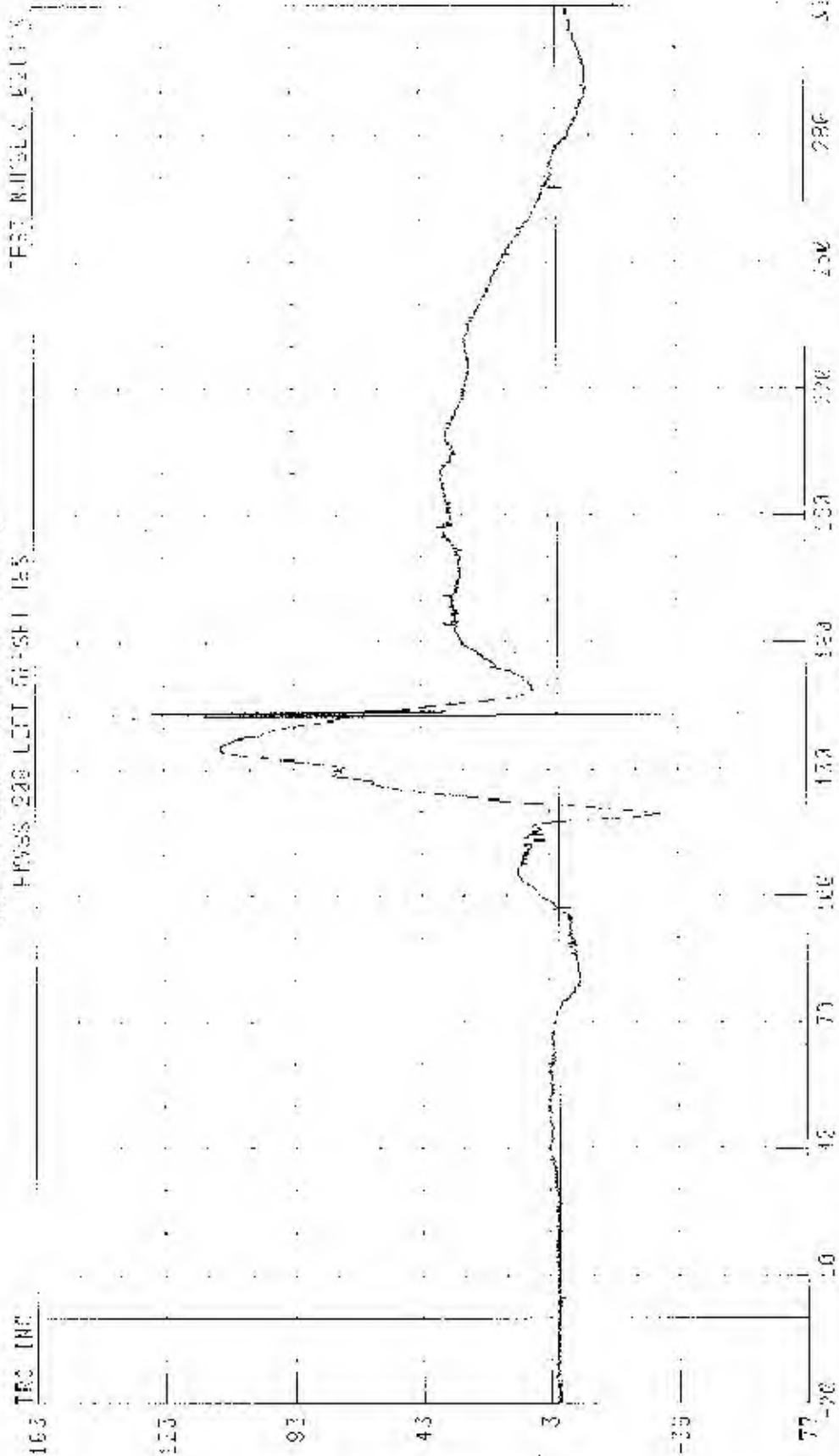
PEER REVIEWED

030124 / 2001 QREVR01 -1 SUBSEQUEN 1500 250

DRIVE / 1000 Y-Axis CONFIGURATION

PHYSS 200 LEFT OFFSET 125

TEST RUNS 64000



CLARK / 100000 FILTER 2000 CLASS 1000

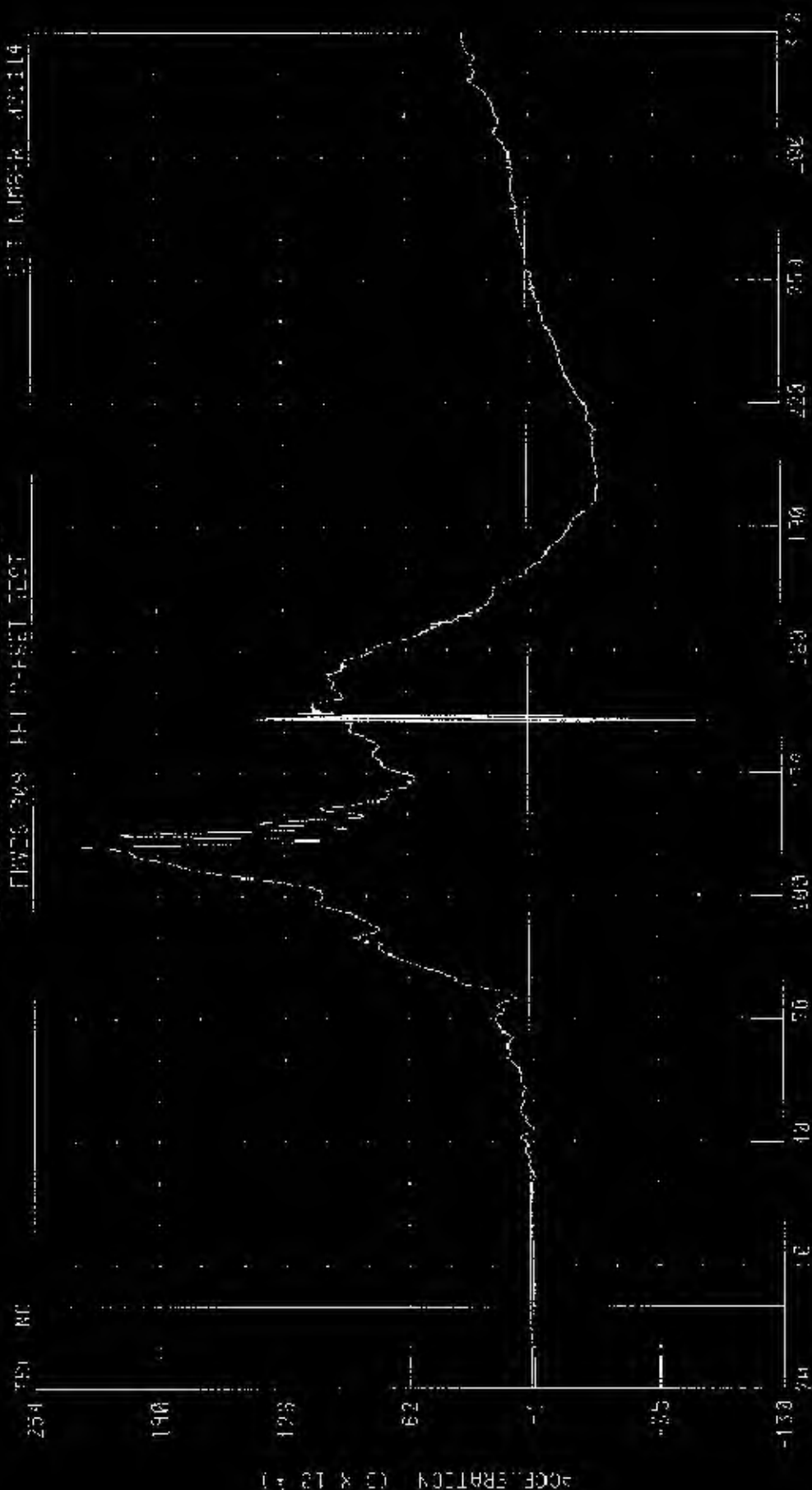
2000 1000 15 30 0 142.02 15 10 0 143 0 15

055114 * 2000 * 01E020L17 0J20.00K 1500 A/D

DRIVES HP01 * 00000 ACCELERATION

FILED 0000 HP01 0-1501 1501

011 1105-0 001114



CHANNEL 01701 011-00 000 01400 0007

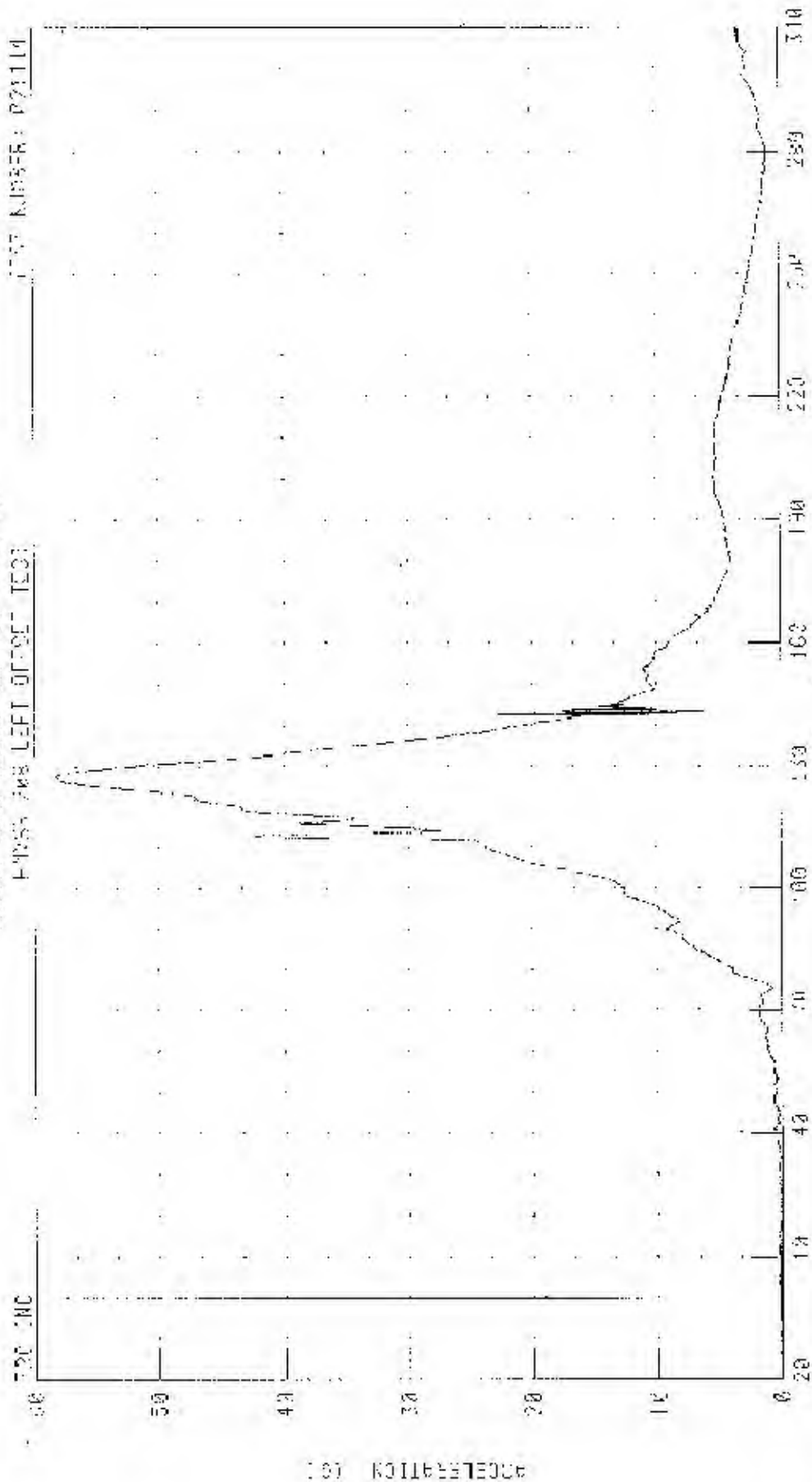
PEAK 10 0 22.88 0 0 112.40 00 17 58 0 0 112.80 15

030104 / 2343 CH-400 - 1 S. P. 1030V 1500 2V

REVIEW HEAD RESULTANT 000-1-00100

PROSS AND LEFT OFFICE 100

TEST NUMBER: P21114



ACCELERATION (g)

TIME (MS)

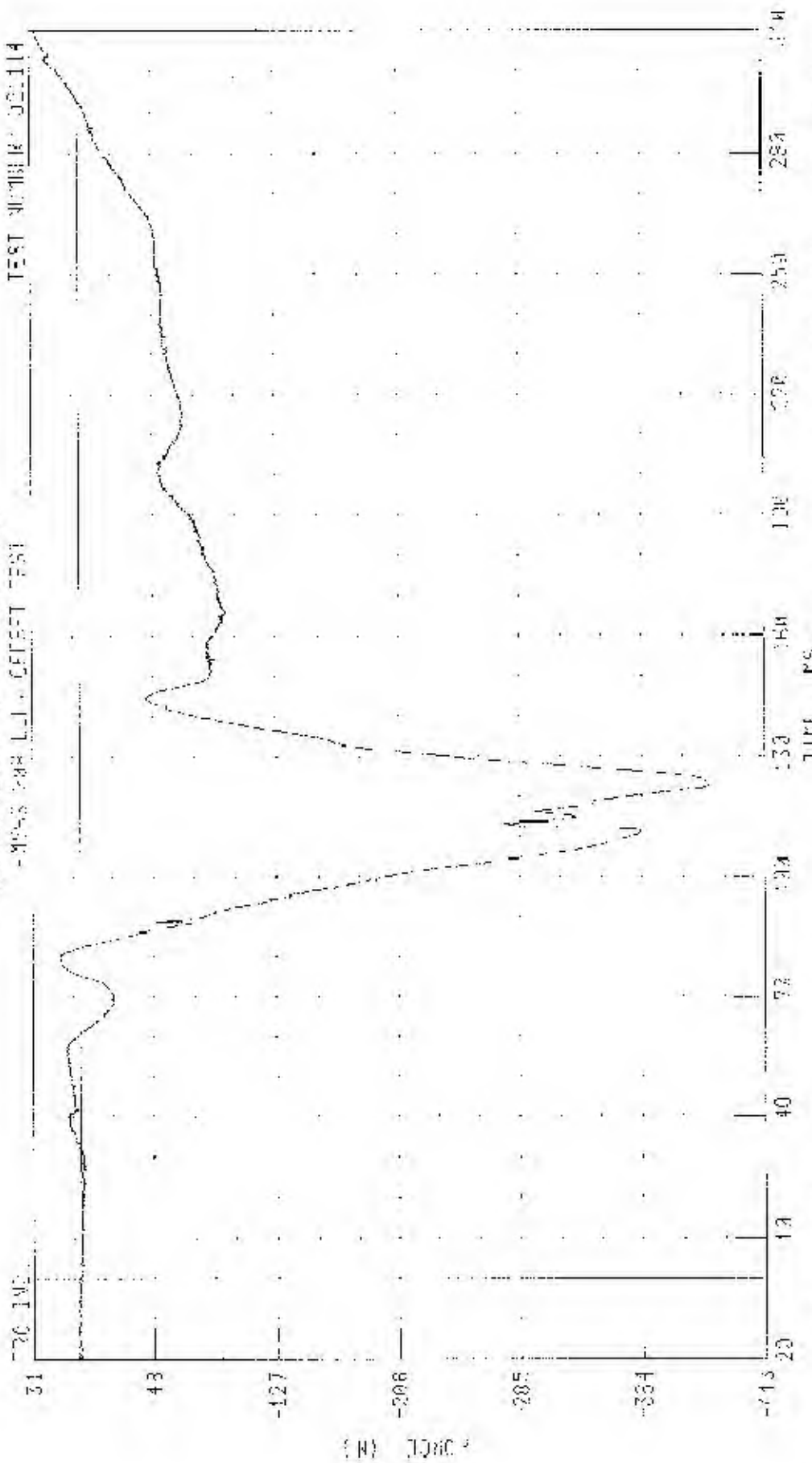
0400051 450000 1111111 CH. 0458 10000

P. 04 0000 50 00 0 127 00 00, 0 00 0 0 0 0 0 0

000104 / 000104 (REAR) LEFT SIDE VIEW 1500 200

DRIVER REAR VIEW 1500 200

-MMS FOR L.J. - EFFECT TEST



0-000104 / 000104 (REAR) LEFT SIDE VIEW 1500 200

DRIVER REAR VIEW 1500 200

-MMS FOR L.J. - EFFECT TEST

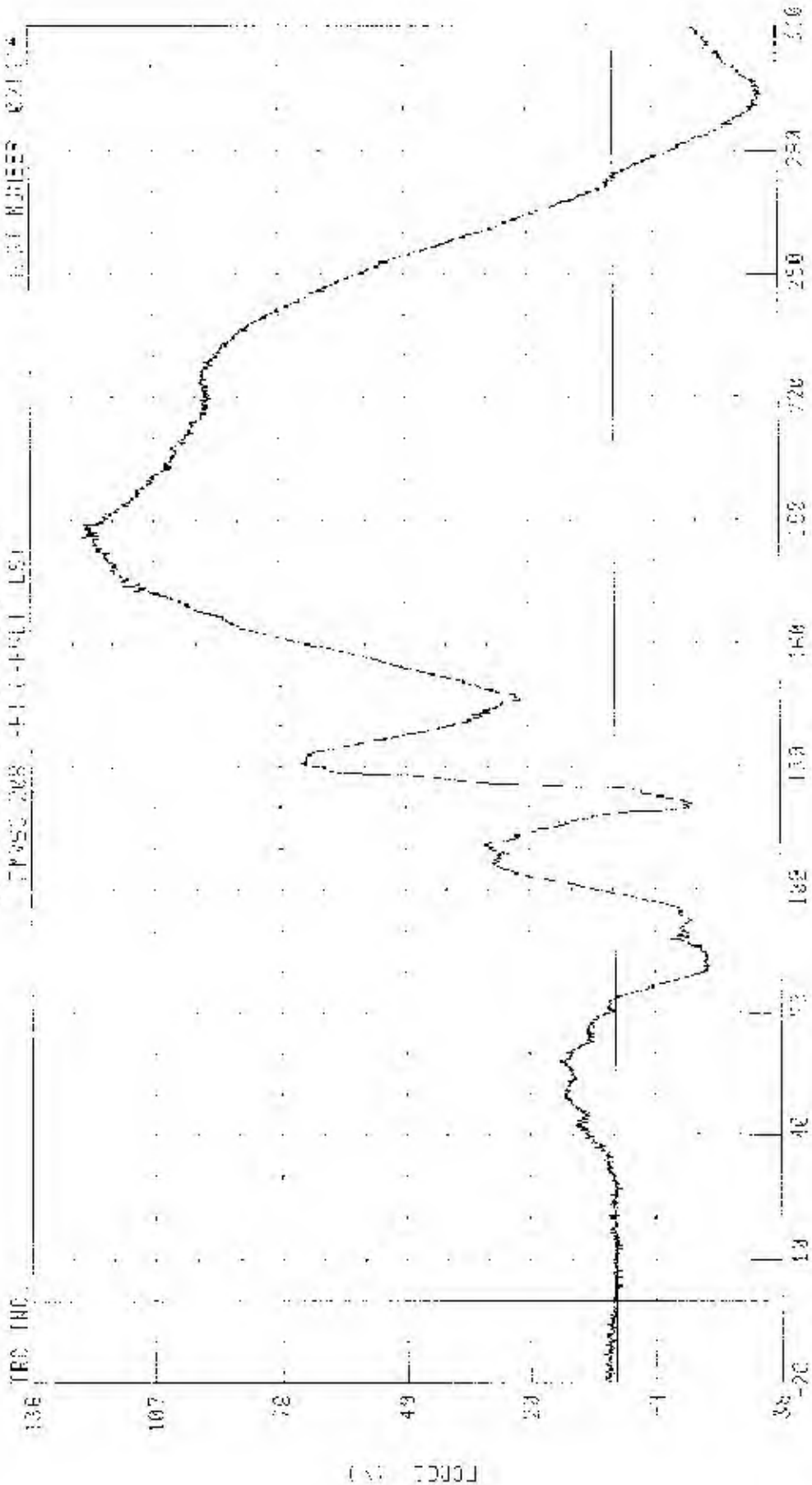
05010 / 2003 CHARTER SURFACE 1510 240

14 VTR ROCK CHUCK SHEAR FORCE

TPASC 008 -F11-F11-151

TRC INC.

LAST NUMBER 07104



CHANNEL 164974 F11 F11 1510 1300

TPASC 008 -F11-F11-151

030104 / 2335 CHEMICAL SLIDERS 15000 2ND

DRIVER W/CK 2 CKTS 0X1H TORCE

CHASSIS 200 1-1 000000 1000

20 100

65

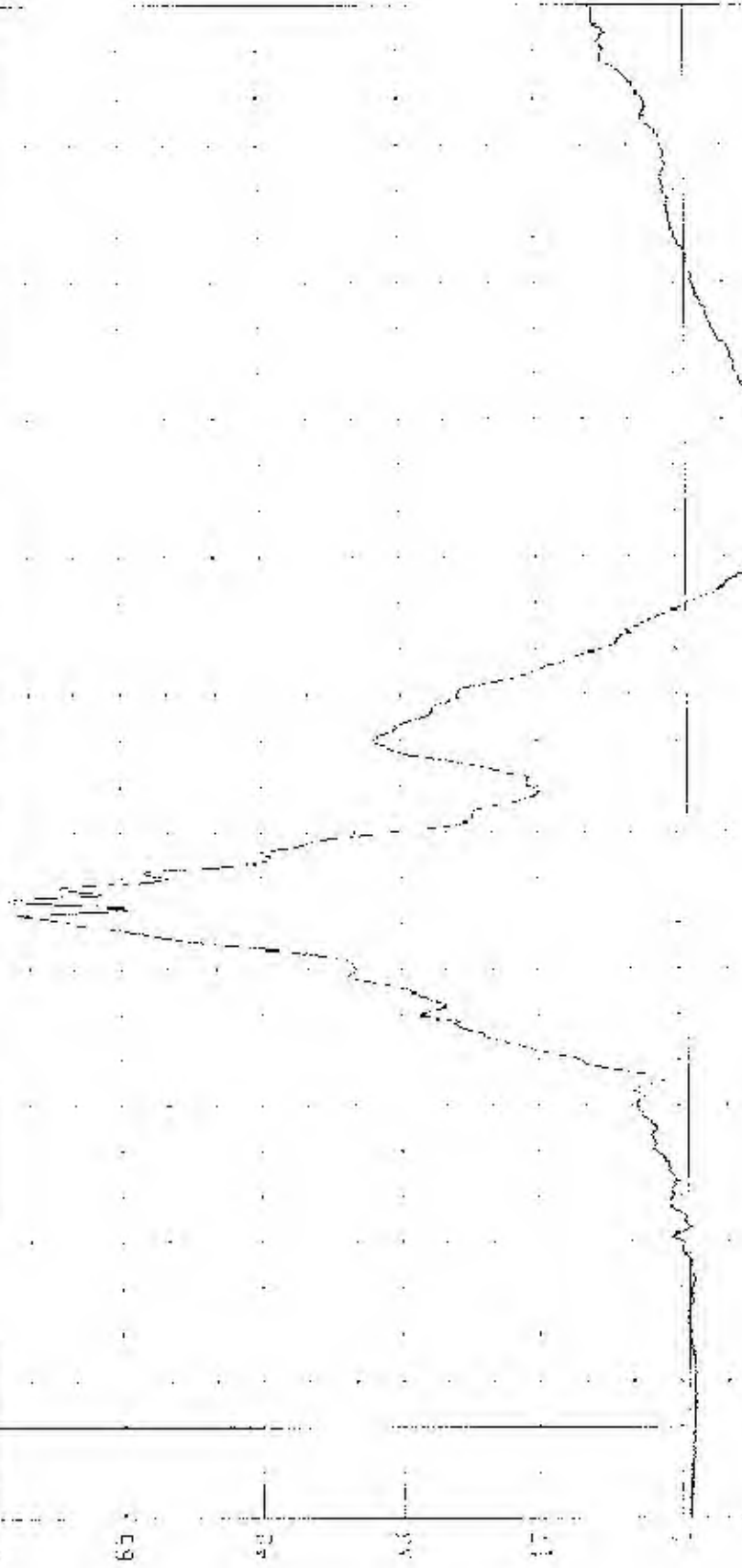
40

25

10

FORCE (X 10³)

021114



10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300

100 120 140 160 180 200 220 240 260 280 300

TIME (sec)

CHASSIS 200 1-1 000000 1000

782 78 1 0 210.25 25% -143.38 N @ 269.55 MS

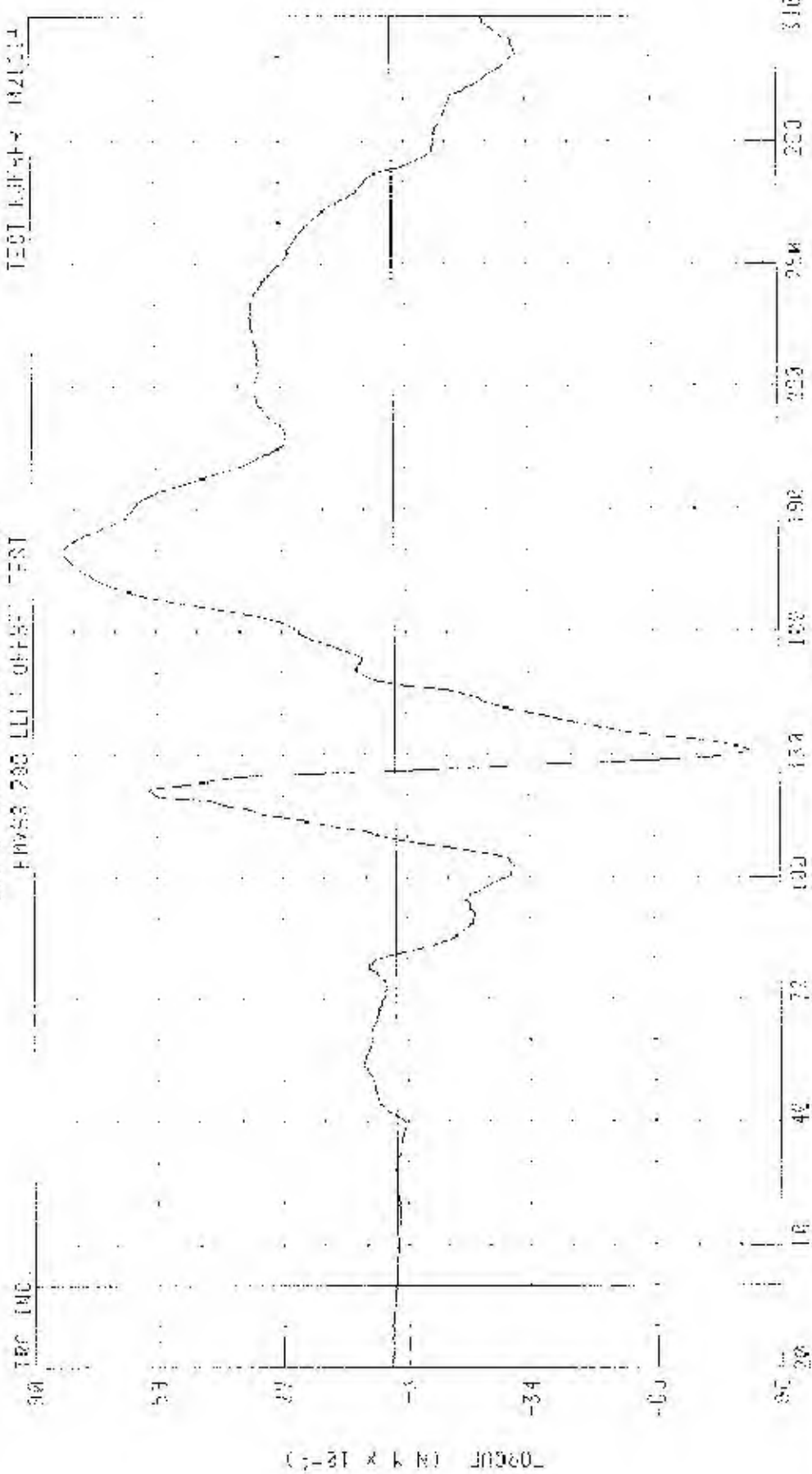
021114

020114 - 2003 CHEVROLET SUBURBAN 1500 2WD

DRIVER SEAT MOMENT MEASUREMENT 2 AXIS

FW253 200 LLI OFFSET TEST

TEST DATE: 04/04/04



200V MEAS: 0.20 N x 10³ 0.09 0.06 0.03 0.36 N 1 W 161.12 MS

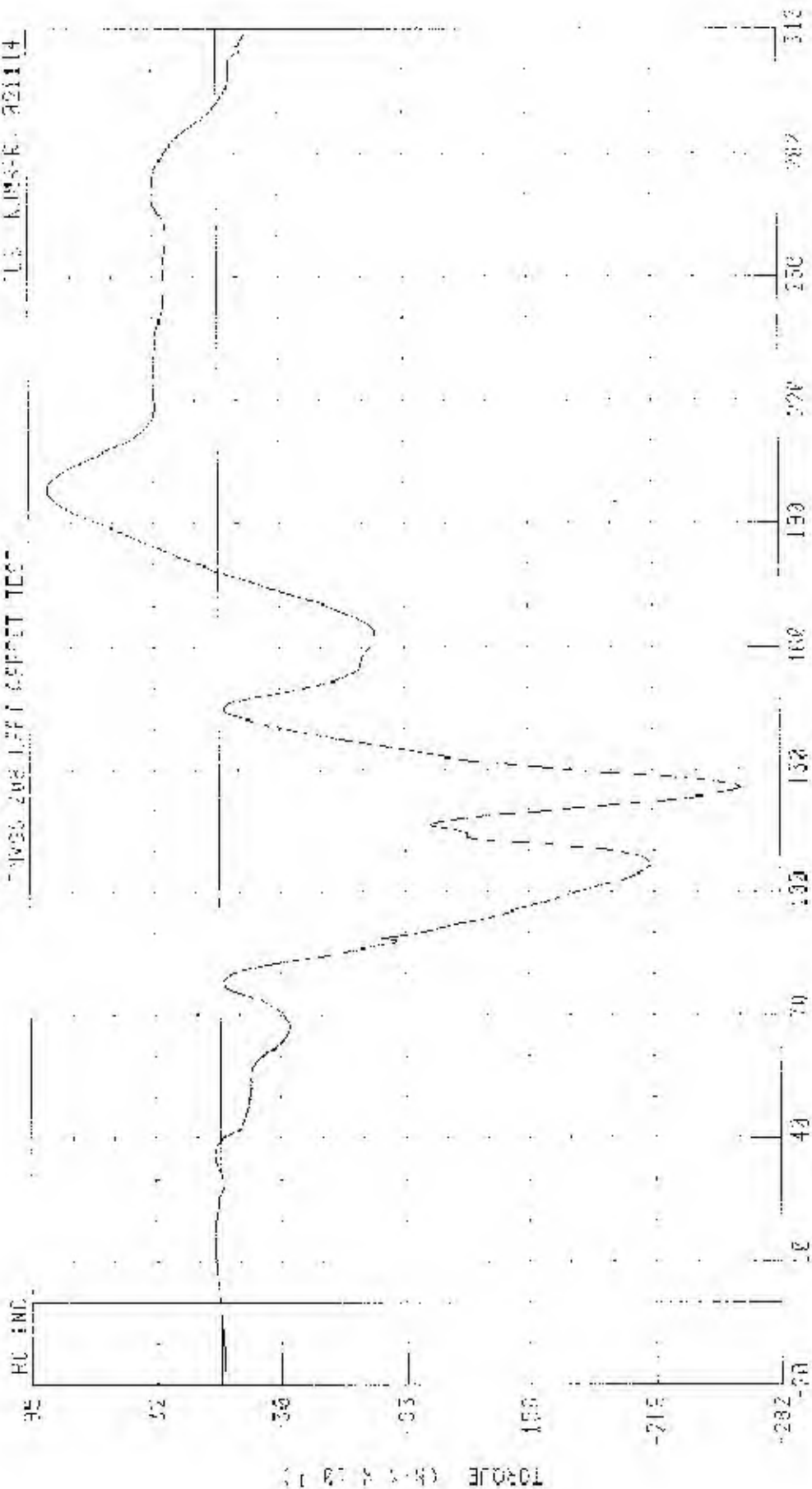
CHUCKLE K-KX01 FILTER 01.0-0.05 0.03

070104 / 2005 CP-5870 LT GUNLOCK 1000 ZVD

DRIVER SECC 1000AT 9400 Y AXIS

FWSS 200.1771 OFFSET 100

LS KMS-R 021114



070104 / 2005 CP-5870 LT GUNLOCK 1000 ZVD
DRIVER SECC 1000AT 9400 Y AXIS
FWSS 200.1771 OFFSET 100

070104 / 2005 CP-5870 LT GUNLOCK 1000 ZVD

DRIVER SECC 1000AT 9400 Y AXIS

FWSS 200.1771 OFFSET 100

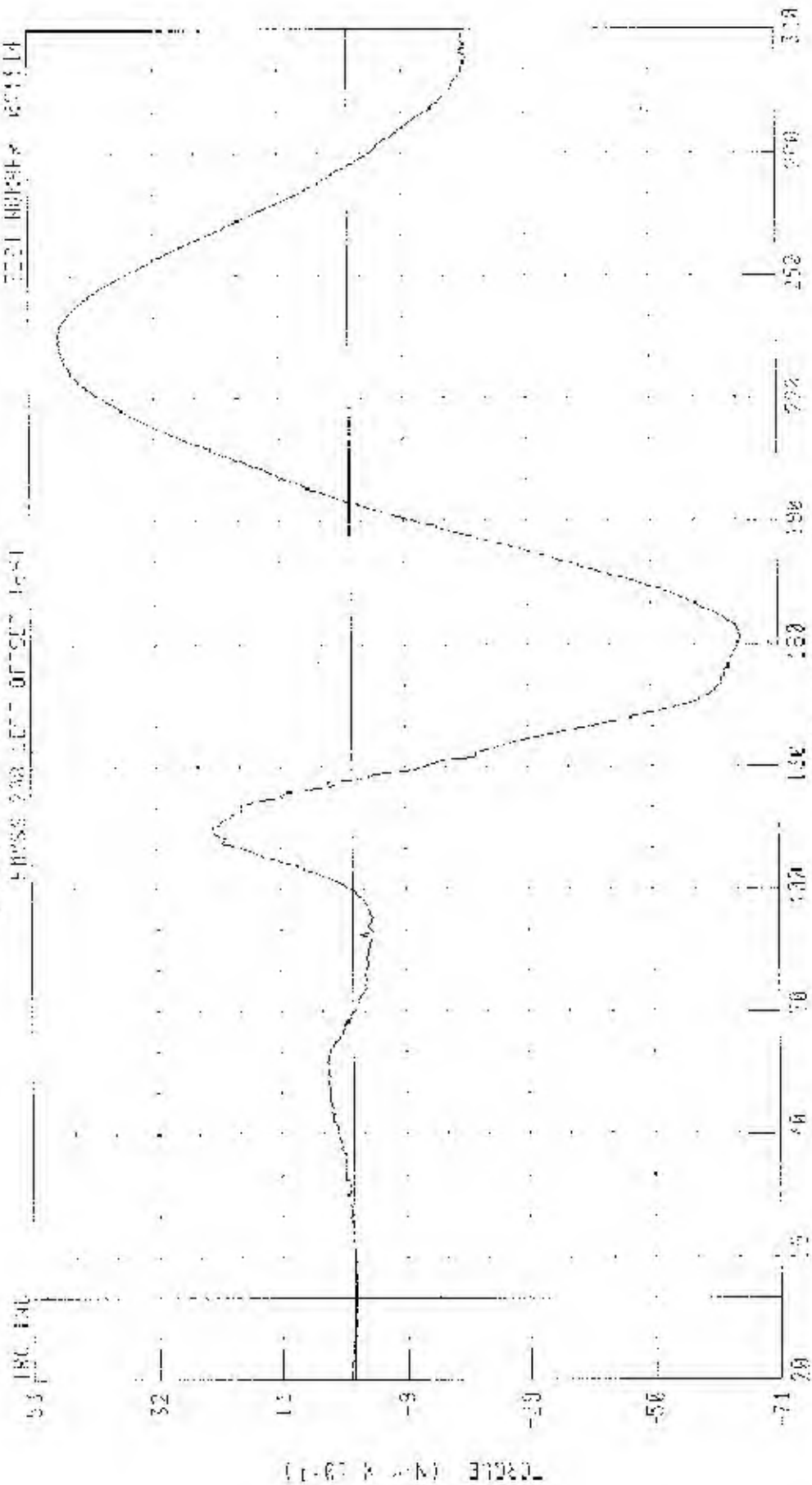
LS KMS-R 021114

021114

036104 / 2088 CHERCLET QUEJPSA1 1300 SW2

CALVER PERK FORMVI 63007 2 IN 8

PHASE 238 DET OF SEC 1481



TIME (MIN)

PERK DATA: 4.04 N 1 0 200 50 175, -6 50 0 1 0 100.00 MS

0 0RVEL 4PK/MI 11TER C- UL488 030

ORIGINAL WITH THE COURT, COPIES TO THE COURT, AND THE COURT

THE UNIVERSITY OF CHICAGO

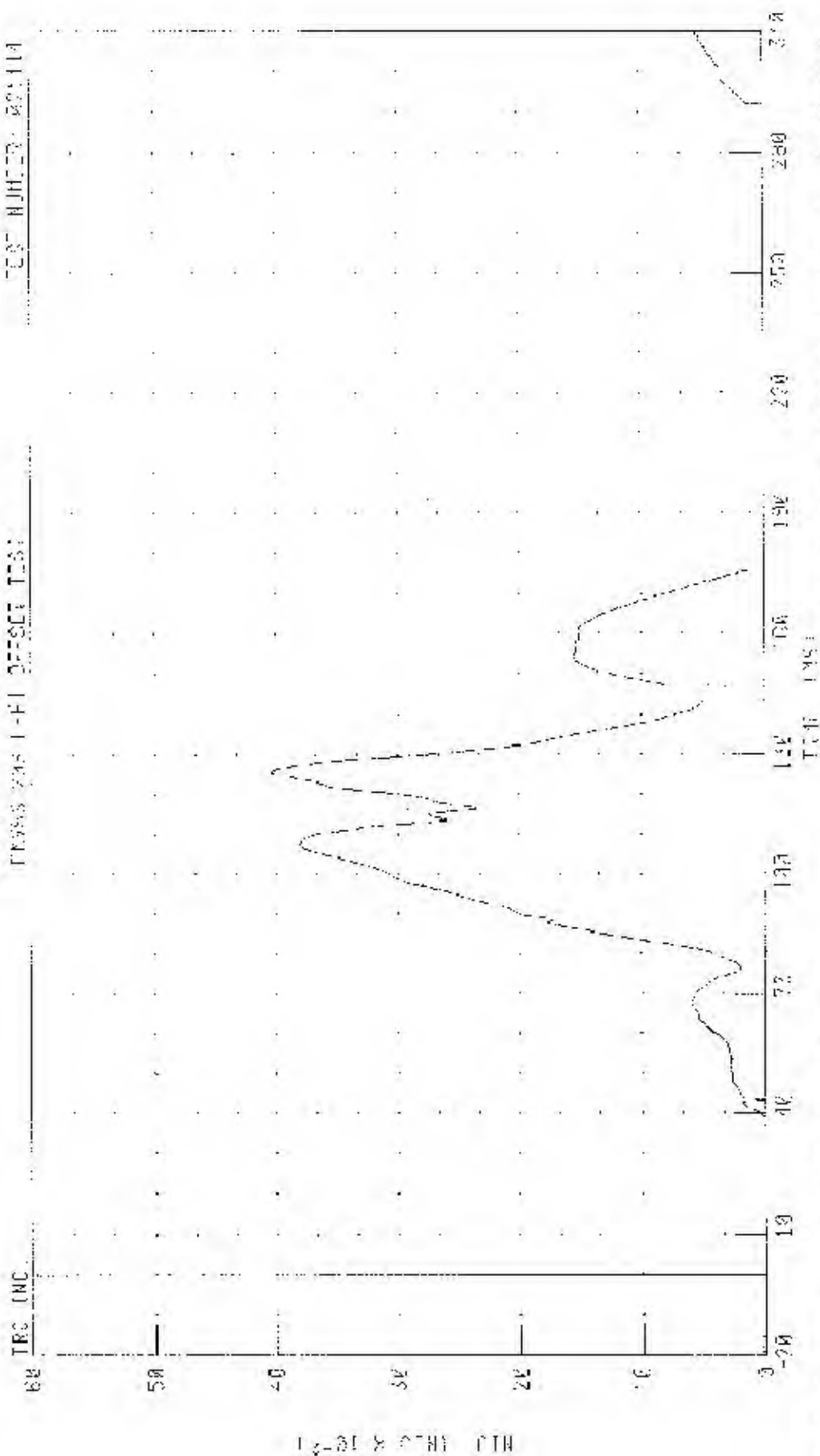
[illegible]

CONSTITUTIONAL COURT

$\mathbb{R}^n \times \mathbb{R}^n \rightarrow \mathbb{R}^n \times \mathbb{R}^n$

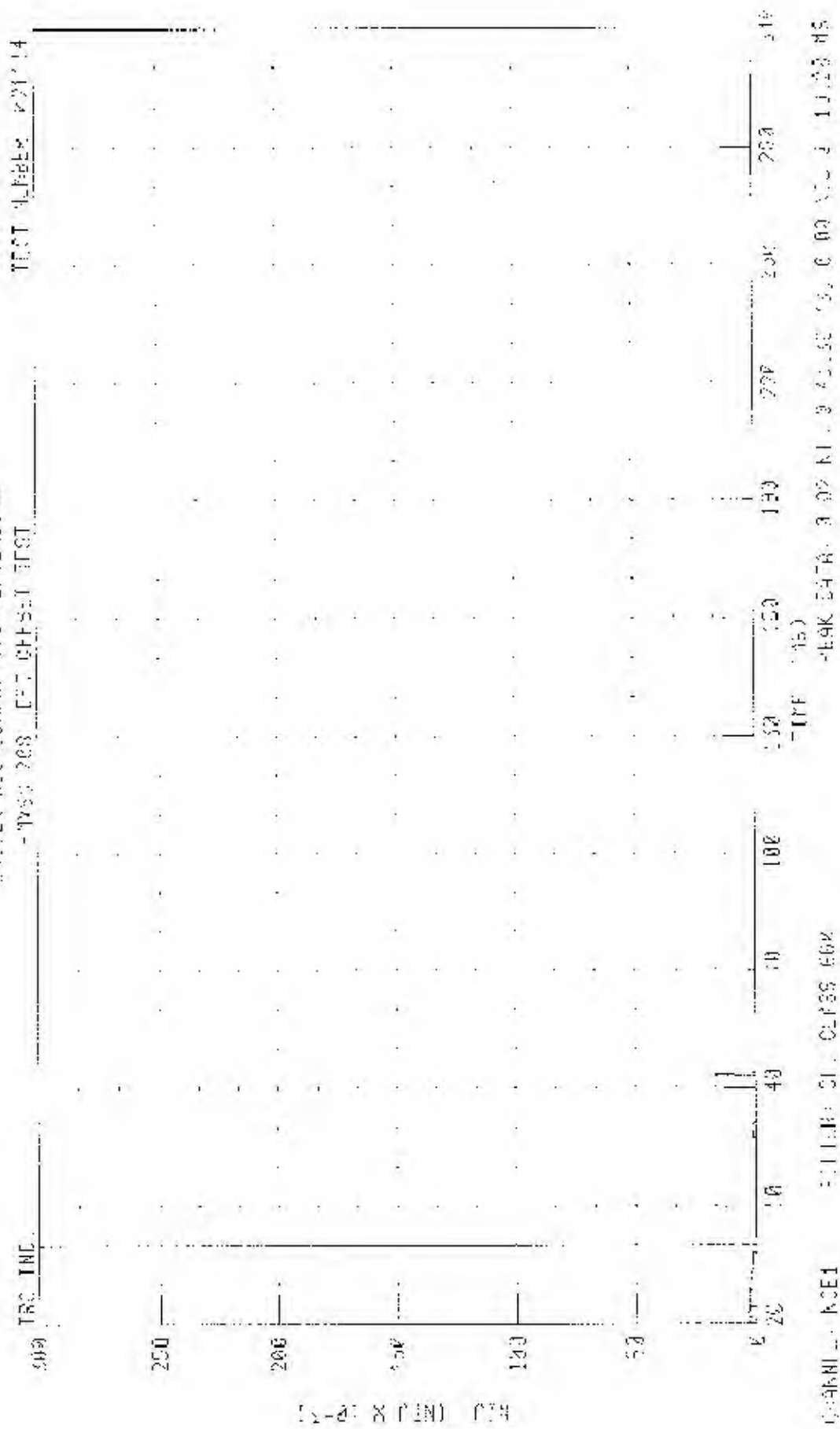
1995-96 1-H 555 T33

100-44163-204114

[illegible]

—474 K LE 4-4-40 NL 6-9 = 76 PS; DUB VL 6-20 32 PS

200114 / 2003 CHEVROLET SUBURBAN 1500 2WS
 DRIVER AIR COMPRESSOR/EXTENSION



GRAPHIC: KCE1 FILTER: 01 CLFSS: 60K PEAK DATA: 0.02 K1.9 21.50 13.0 00 17.0 13.23 MS

030124 / 2023 CHEMICAL CT STUDY 1500 240

DRIVER RLU COMPRESSION/ LXL10H

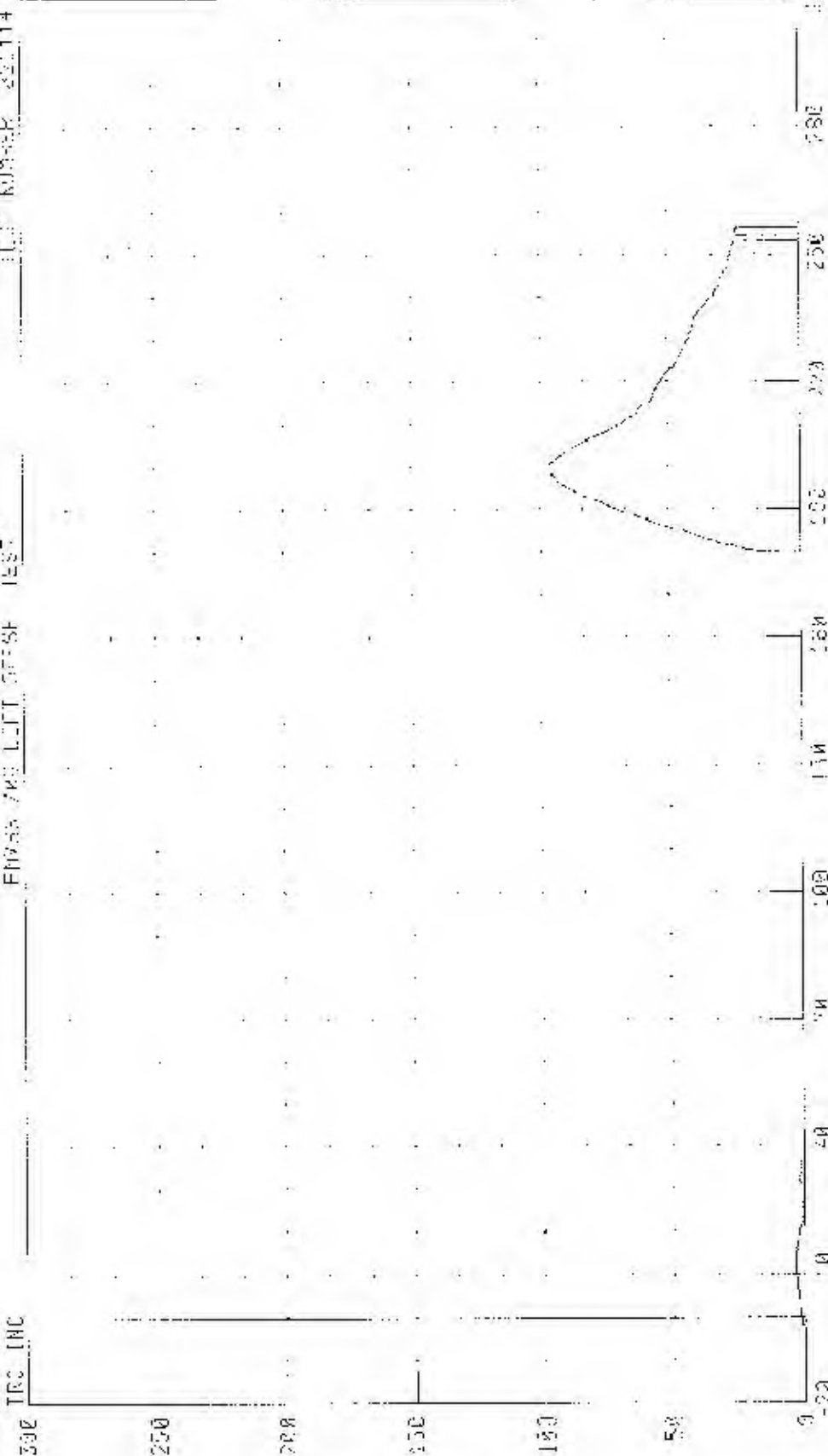
ICD NUMBER 021114

TRC INC

FW35 700 LEFT OF SH

TEST

ICD NUMBER 021114

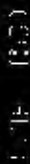


PEAK DATA: 8.18 HZ @ 100.15 MS, 2.05 HZ @ 84.00 MS

CANAL 1001 DRIVER RLU COMPRESSION/ LXL10H

—Yusuf Zuhayr, EFF 01/11/2017

IEEE-AMUL-2014

[illegible]

030104 / 2005 CHEVROLET SUBURBAN 1500 2WD

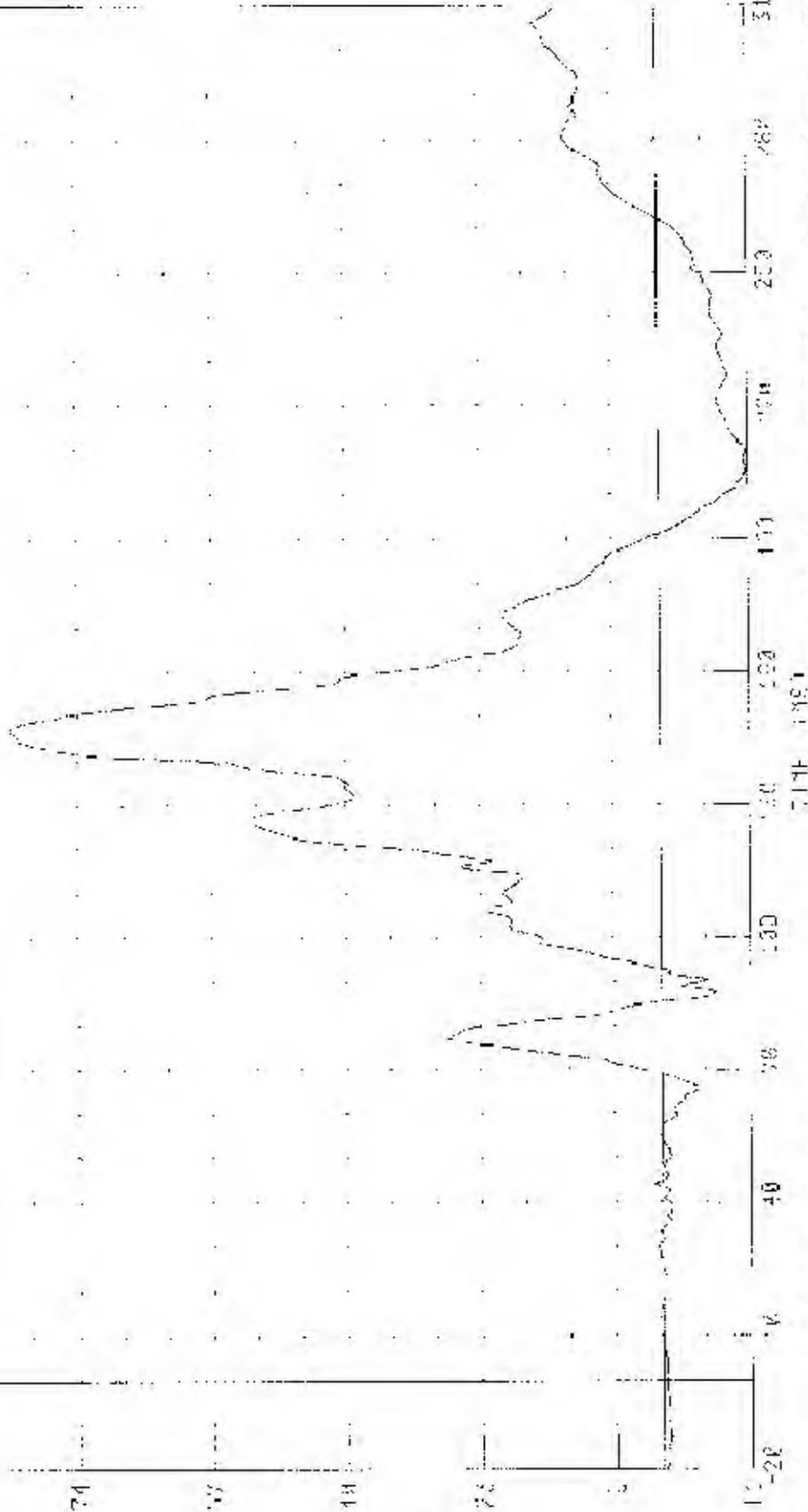
CRASH-2 CHEST V AXIS OCCUPANT PROTECTION

FMVSS 200 LE- OFFSET TEST

TEST NUMBER: 820114

100 LBS

ACCELERATION (G X 10⁻³)



CHANNEL: CRASH1

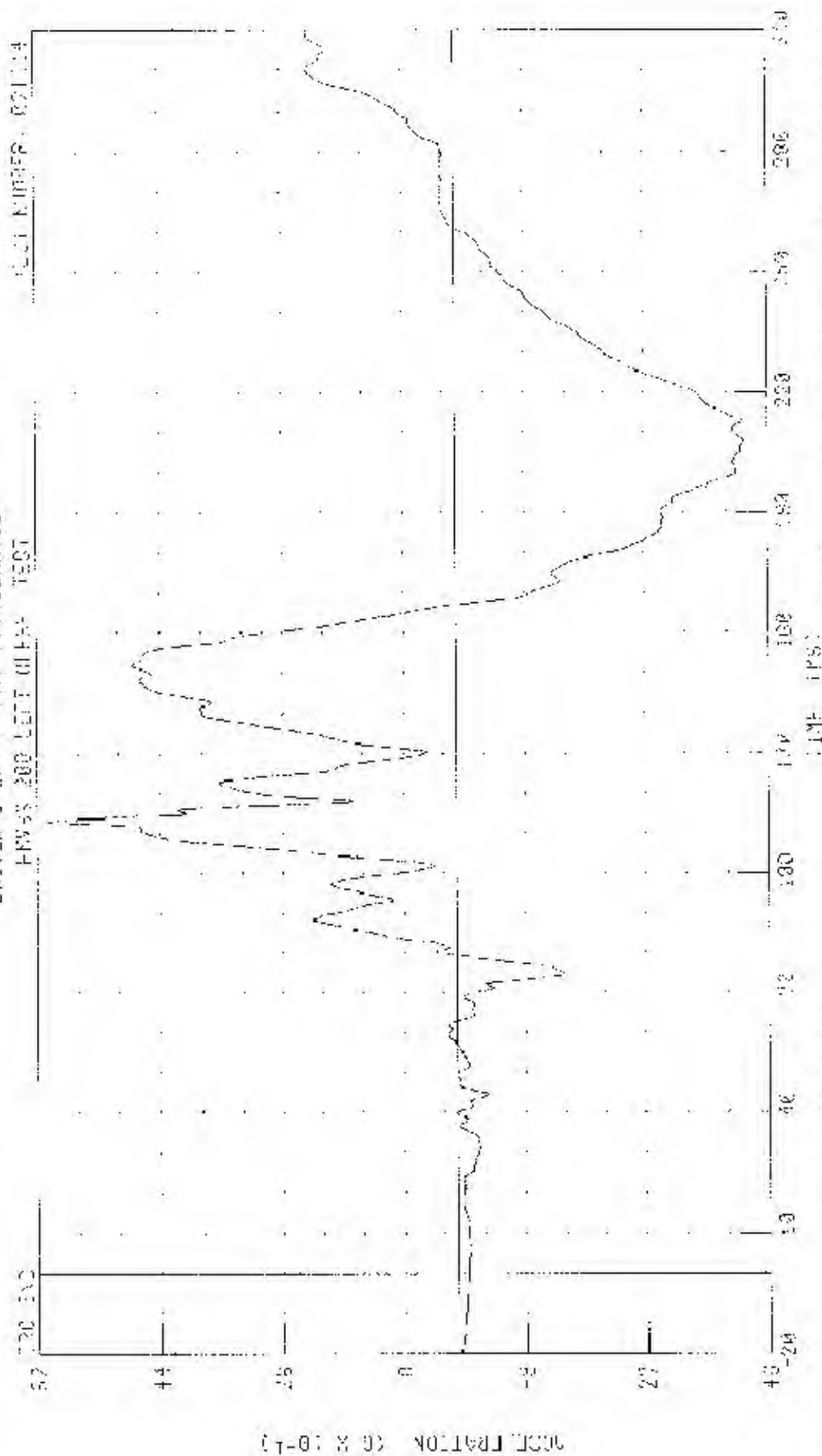
FILTER: 0.4 C-ASC 180

PLAY 00:00:00 147.12 Hz, 1.00 0.0 0.00 0.0 MS

030104 / 2003 CH-480 F1 GDBR30V 1446 301

FILED 6 TEST 7-AXIS POSITION MOTION

FW 5% 200 LEFT DIFF TEST



CHANNEL 001201 FILED 04 0305 180

FILED 0171 5 00 16 113 44 18. -7 35 5 0 207 00 75

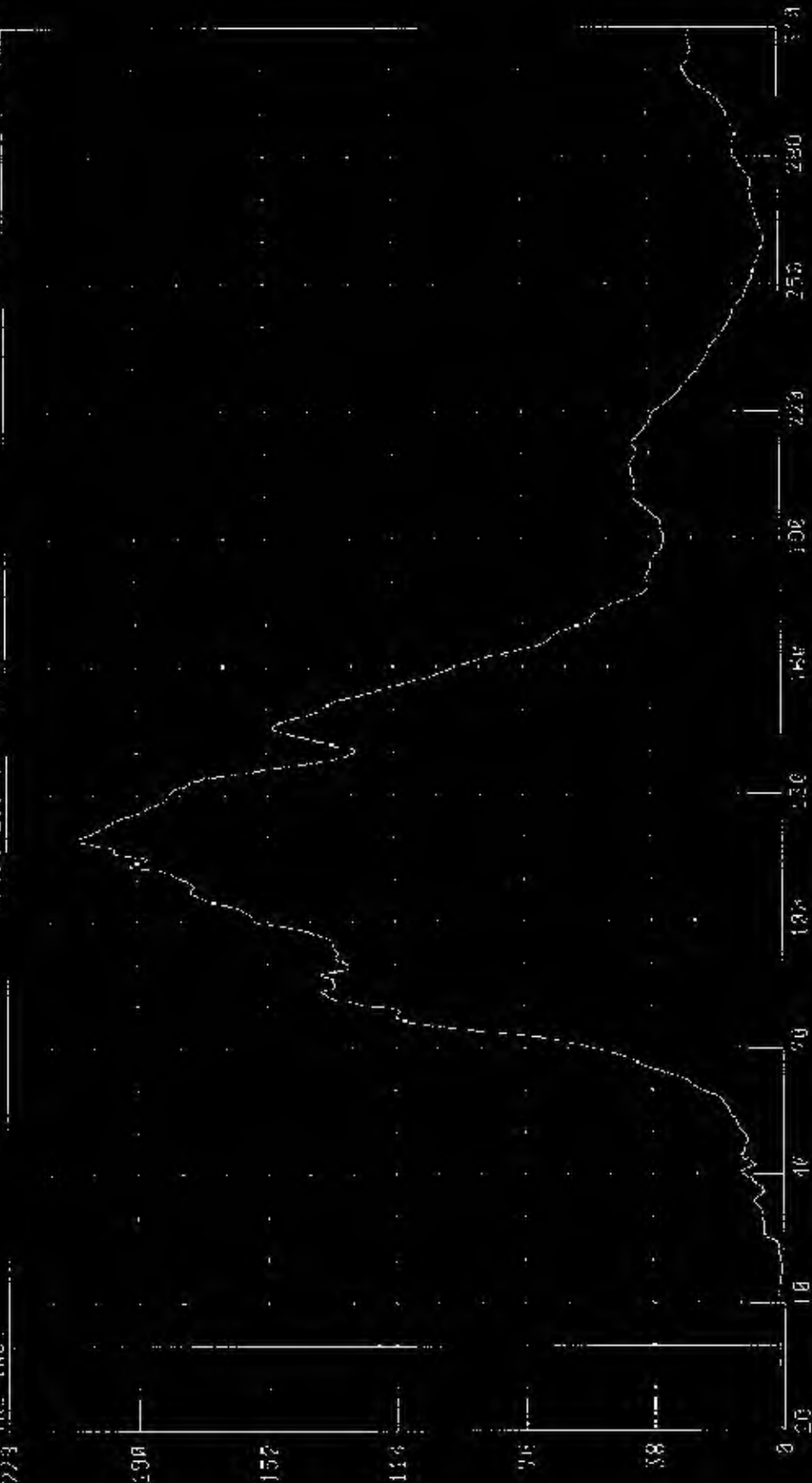
DATE: 2025-08-20 17:30:00

DRIVER: DIRECT RESEARCH

TEST: 200-11-002-001

INC. INC.

TEST: 200-11-002-001



VOLTAGE (0.1V)

TIME (MS)

PEAK DATA: 20.0E 0.0 1.9 52.0E, 0.0E 0.0 20.0E

CHANNEL: CONTROL FILTER: CH. 0 000 100

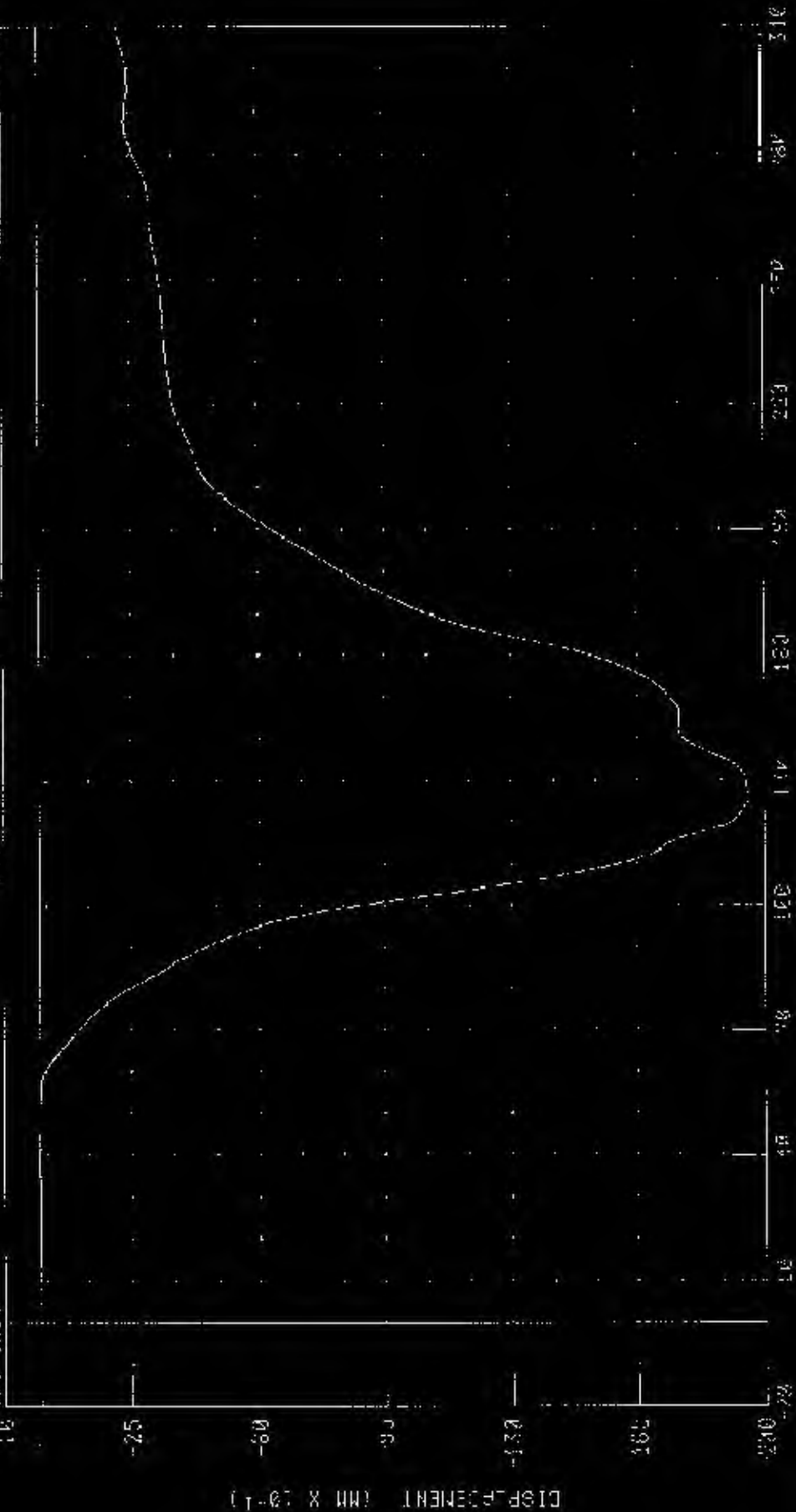
010123 - 2003 CUT920 FL SUBJ: 1500 20F

URDVB D'EST DIFFICILE

40075 203 L 1 0000F 7PST

TRD INC.

7PST 000000 220113



471123

000000 000000 000000

0.00

0.00

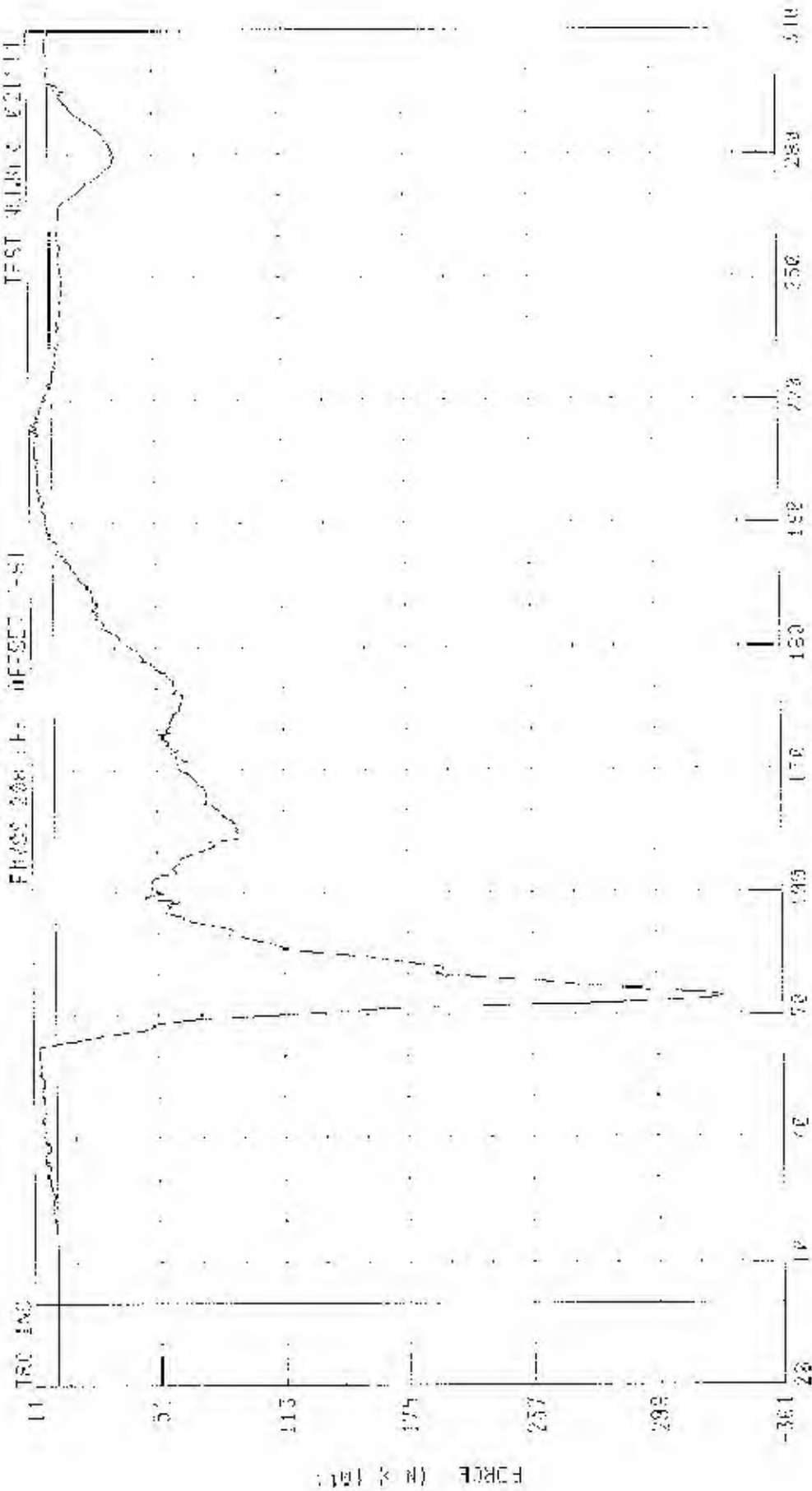
0.00

COMPING 2005 CHEVROLET SUBURBAN 2500 2WD

DRIVER LEFT FOOT FORCE

PHASE 208.145 OFFSET -81

TEST 4130 S 021114



PHASE 208.145 OFFSET -81

TEST 4130 S 021114

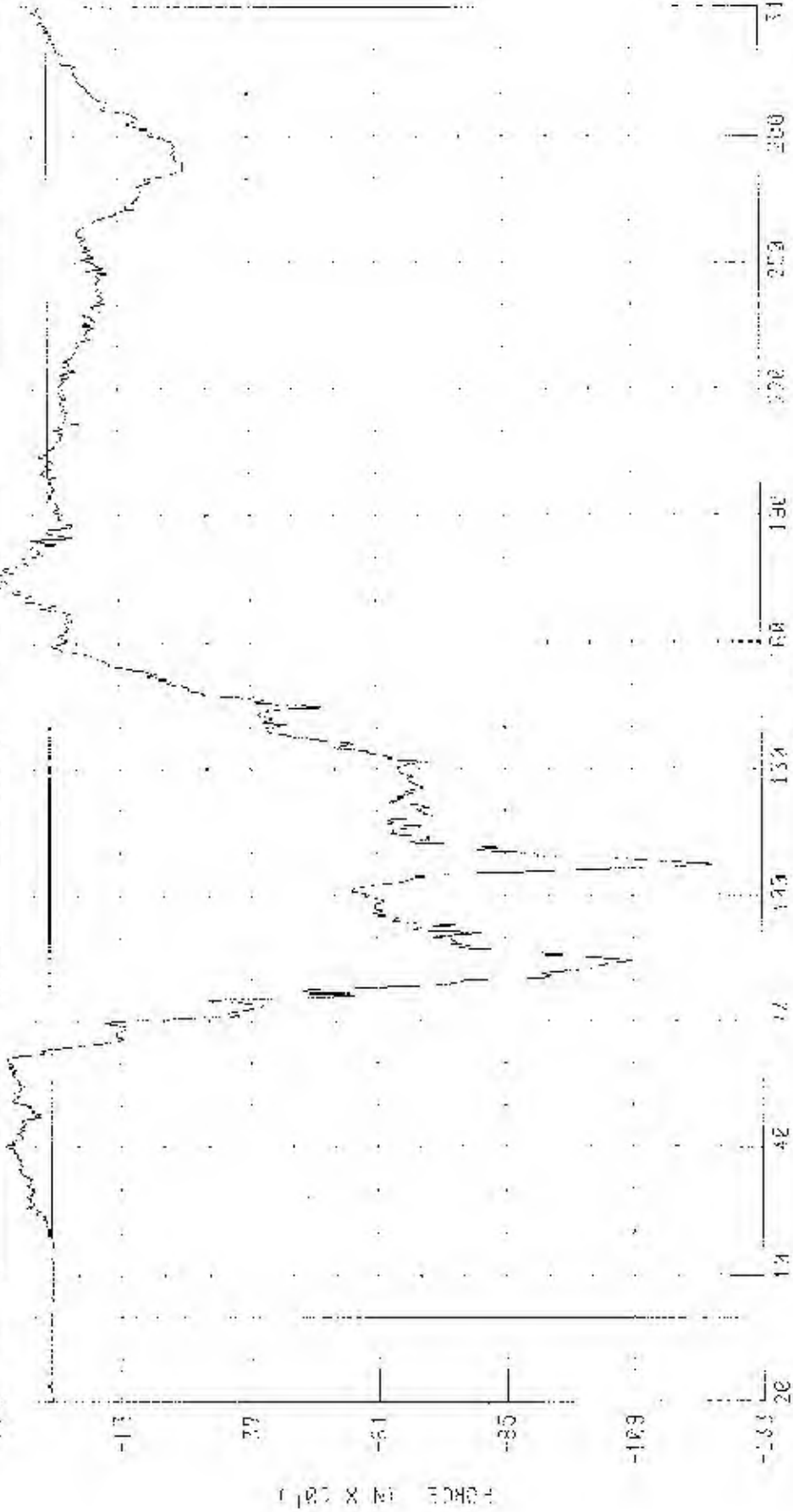
030104 / 2003 CHEVROLET CLOUTIER 1500 2X1

TRUCK RIGID + HUB FORCE

MOVES 200 LBS OFFSET TEST

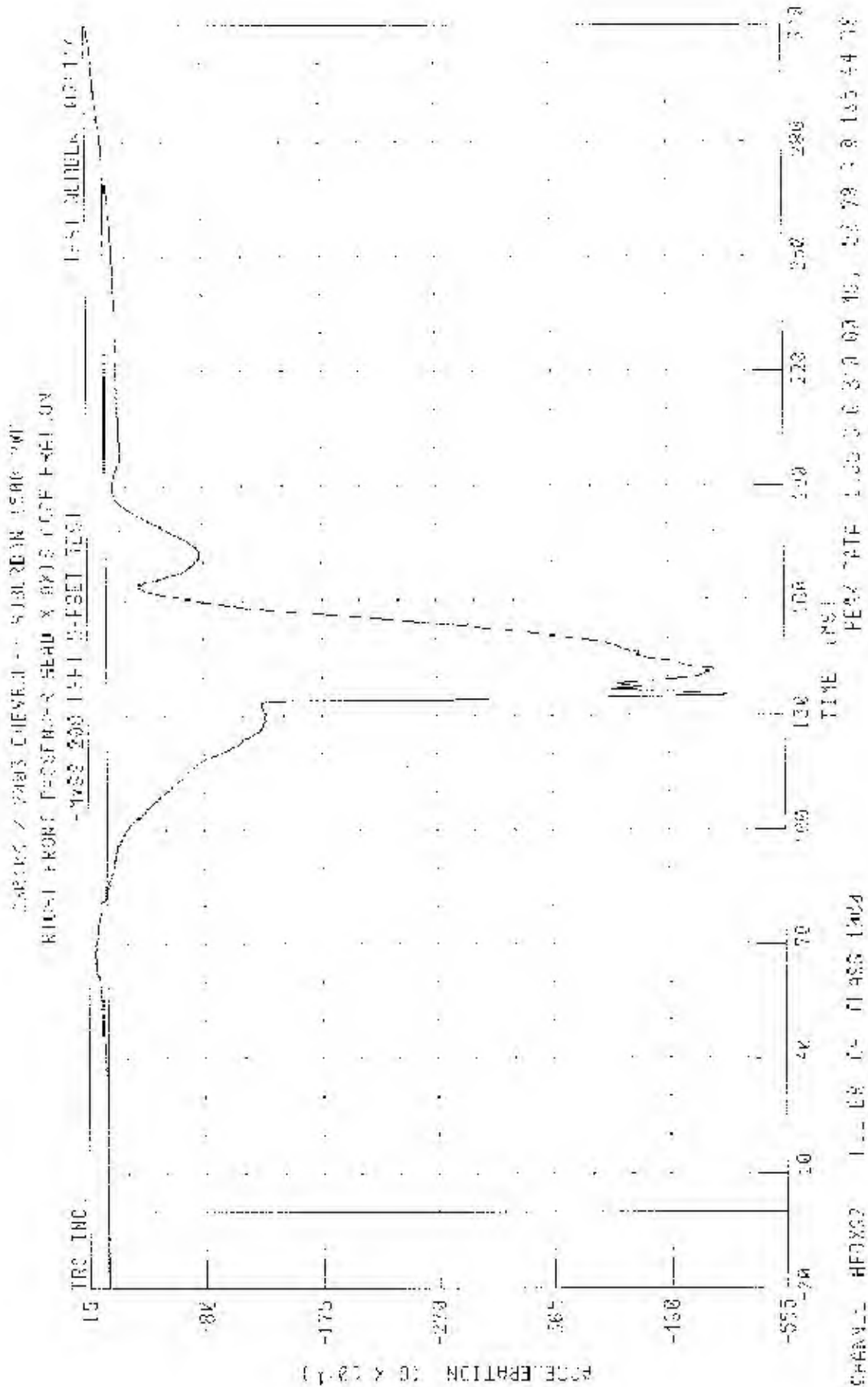
ILU1 RUN 2F2. 007.11%

11 IRC LINE



CANAL - RUNS / FILTER OF LINES 020

TIME IN SECS
FILE DATA 100 000 0 113.04 12. 11240 00 0 105 30 13



030104 / 2000 CLEVELAND SLURRY 1500 787

RIGHT FRONT PRESSURE / END Y AXIS OFF-PEAK 100

PRESSURE LEFT OFF-PEAK 100

TRF 100 100 100 100

151

124

97

70

43

16

(-0.1 X 10) 10 100 1000

11

20

40

60

80

100

120

140

160

180

200

220

240

260

280

300

320

340

360

380

400

420

440

460

480

500

520

540

560

580

600

620

640

660

680

700

720

740

760

780

800

820

840

860

880

900

920

940

960

980

1000

1020

1040

1060

1080

1100

1120

1140

1160

1180

1200

1220

1240

1260

1280

1300

1320

1340

1360

1380

1400

1420

1440

1460

1480

1500

1520

1540

1560

1580

1600

1620

1640

1660

1680

1700

1720

1740

1760

1780

1800

1820

1840

1860

1880

1900

1920

1940

1960

1980

2000

2020

2040

2060

2080

2100

2120

2140

2160

2180

2200

2220

2240

2260

2280

2300

2320

2340

2360

2380

2400

2420

2440

2460

2480

2500

2520

2540

2560

2580

2600

2620

2640

2660

2700

2720

2740

2760

2780

2800

2820

2840

2860

2880

2900

2920

2940

2960

2980

3000

3020

3040

3060

3080

3100

3120

3140

3160

3180

3200

3220

3240

3260

3280

3300

3320

3340

3360

3380

3400

3420

3440

3460

3480

3500

3520

3540

3560

3580

3600

3620

3640

3660

3680

3700

3720

3740

3760

3780

3800

3820

3840

3860

3880

3900

3920

3940

3960

3980

4000

4020

4040

4060

4080

4100

4120

4140

4160

4180

4200

4220

4240

4260

4280

4300

4320

4340

4360

4380

4400

4420

4440

4460

4480

4500

4520

4540

4560

4580

4600

4620

4640

4660

4680

4700

4720

4740

4760

4780

4800

4820

4840

4860

4880

4900

4920

4940

4960

4980

5000

5020

5040

5060

5080

5100

5120

5140

5160

5180

5200

5220

5240

5260

5280

5300

5320

5340

5360

5380

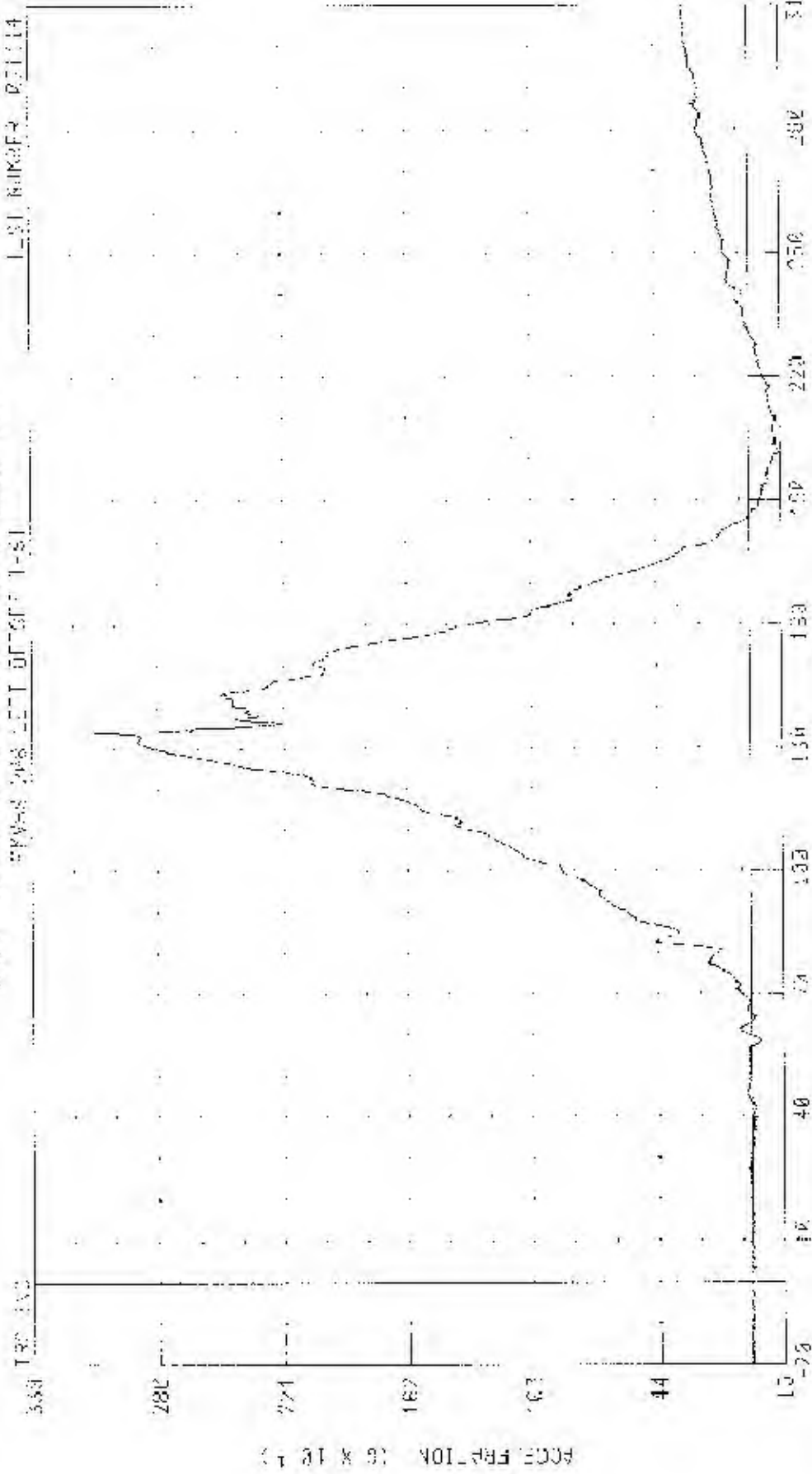
5400

030104 / 2003 CLEVELAND SUBURBAN 1500 200

RIGHT -80K1 PASSENGER HEND 7-HXIS ACCIDENT

WVMS 2008 LEFT OF GT 1-S1

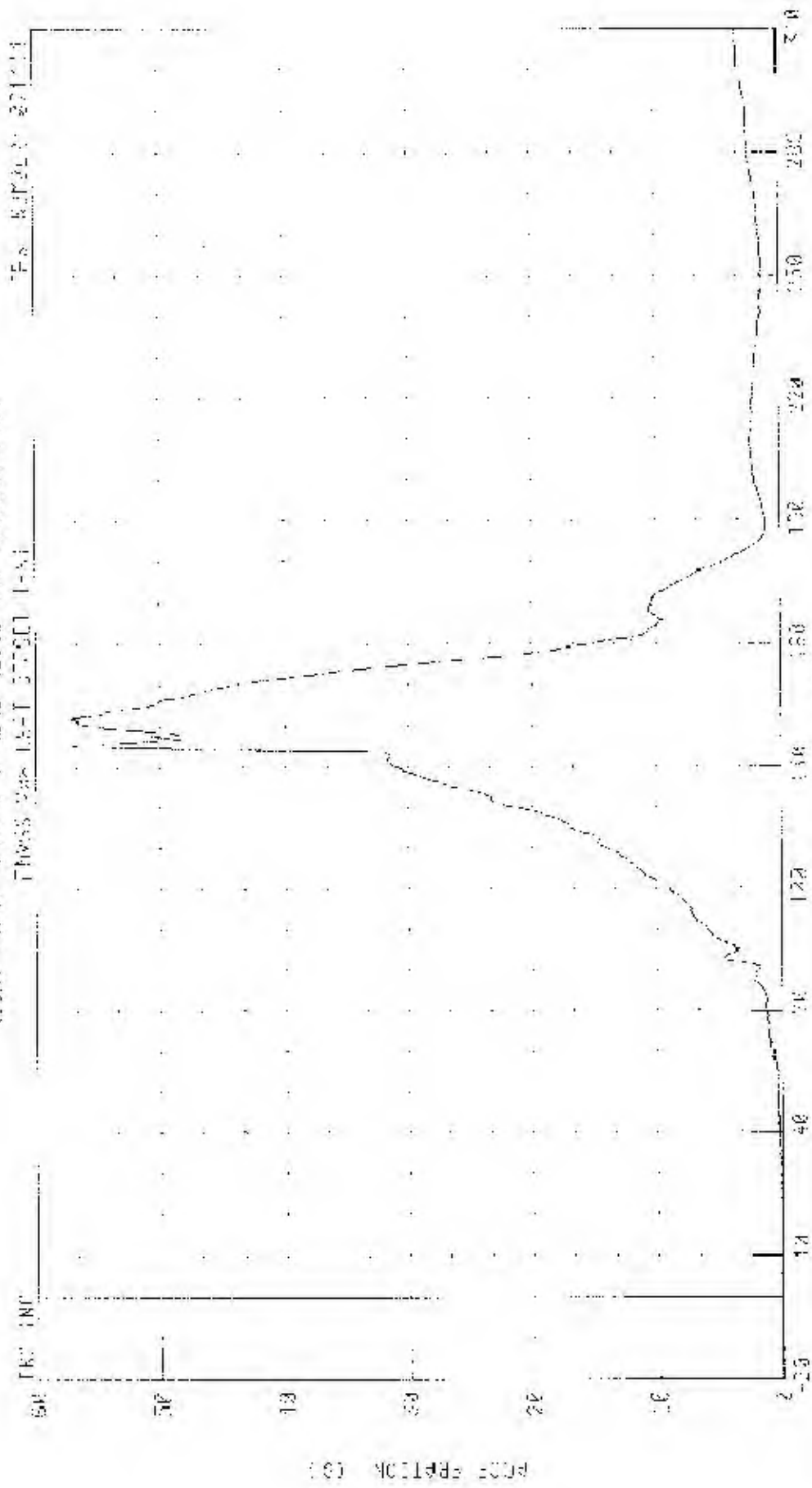
LSL NUMBER 071114



CHANNEL - HFL202 FILTER - C- CLASS 1500

550K 10410 31.02 C 0 154 30 P0, -1 45 6 8 200.52 K3

CM104 - 2003 CLEVELAND 814J0804 1502 201
 RIGHT FRONT FRONT END TEST LIGHT ACCELERATION



CM104 - 2003 CLEVELAND 814J0804 1502 201

RIGHT FRONT FRONT END TEST LIGHT ACCELERATION

U.S. AIR FORCE 421-14

ISSN 1557-4411 (print) 2255-8264 (online)



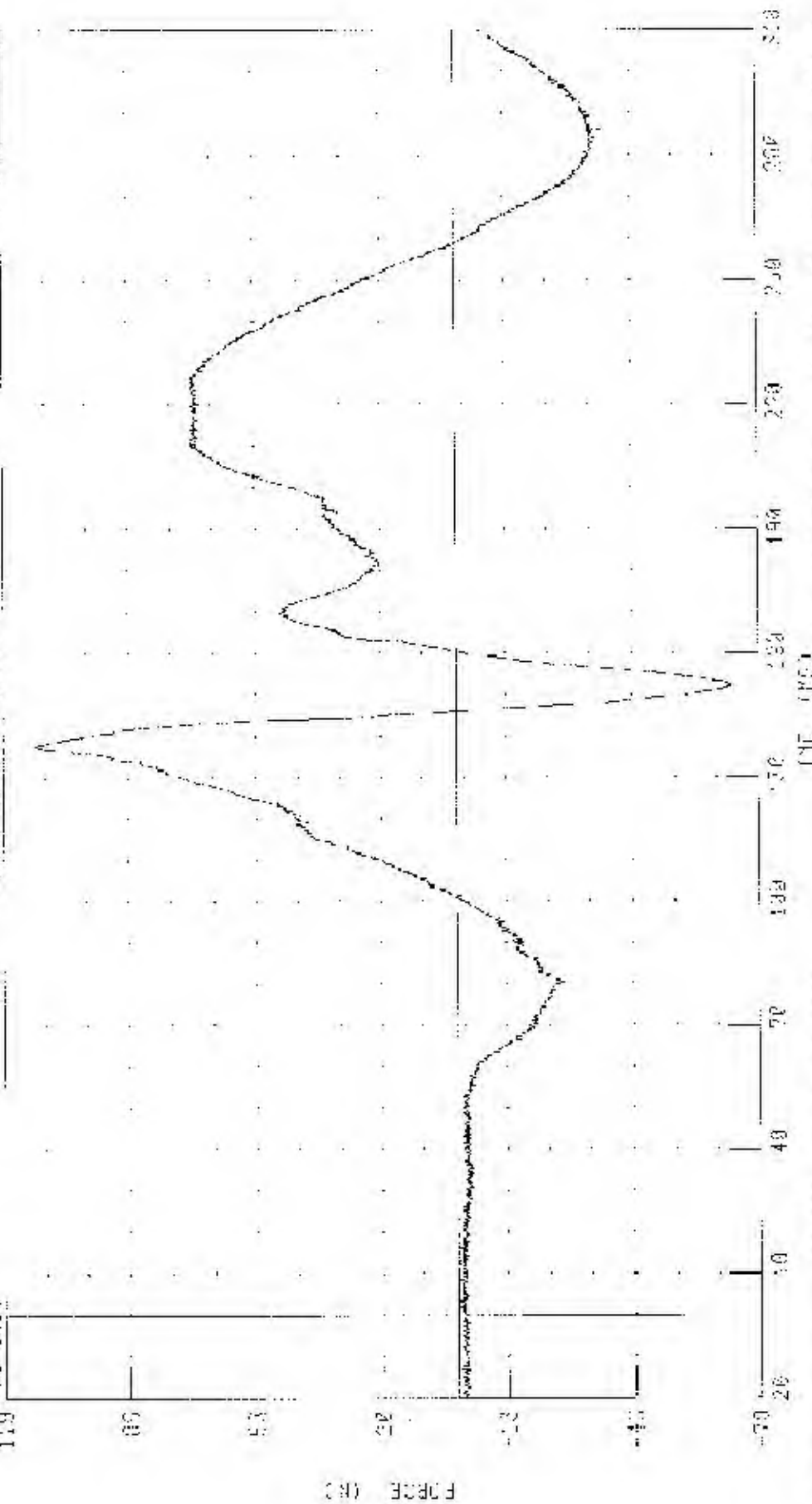
03HK 1912 325.43 K 8 150.00 15 -433 11 K 0 130.55 113

03010- 2003 CUMMINS SUBURBAN 1500 2WD
 RICH FRONT PASSENGER WHEEL AXLE SPHER JOINT

PRVSS 288 LEFT D-FRST TEST

119 100 50 00

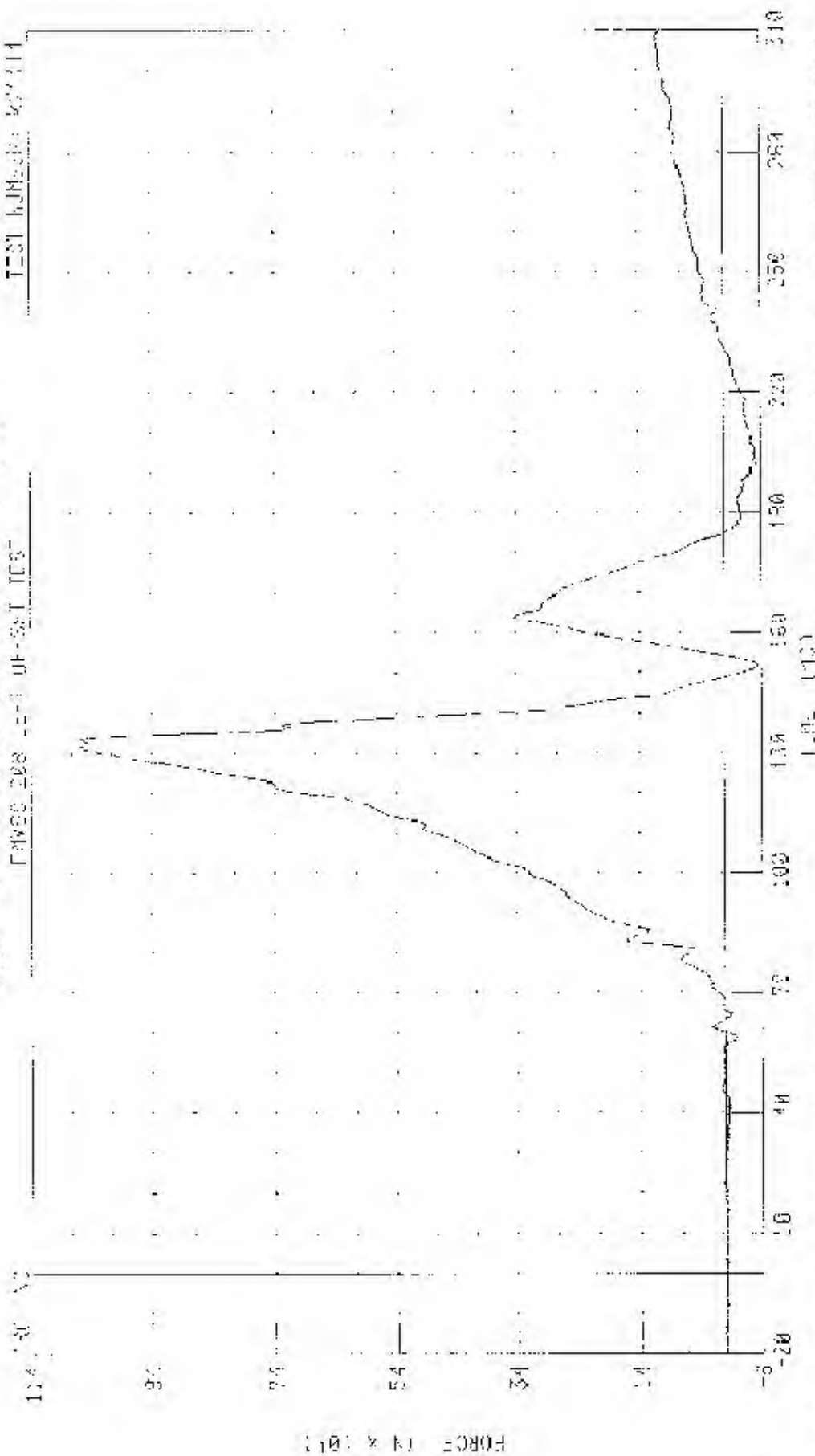
155 100 100 119



CHANNEL: ALXV2 FILTER: 10 CLASS 1000

PEAK DATA 111.13 N 4 133.30 F3, -71.95 N 9 152.70 F8

010104 / 2223 CHEVROLET SUBURBAN 1500 2WD
RIGHT FRONT SUSPENSION JACK 2-1X15 AXIAL FORCE



CORREL 478772 -111131 GIL CLASS 1402

PEAK DATA: 100.20 N @ 131.50 SEC, 110.00 N @ 280.00 SEC

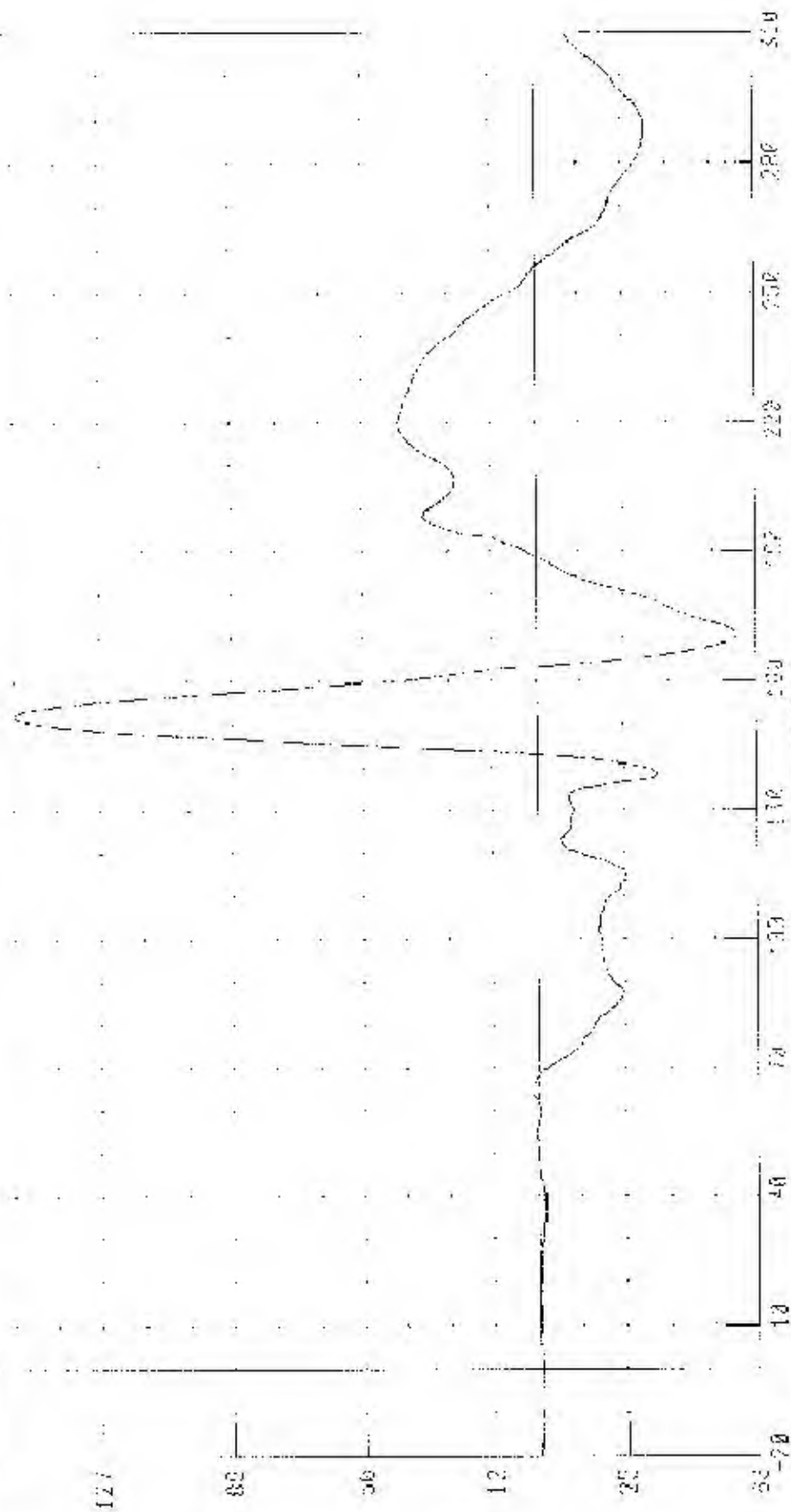
140104 2500 CHEVROLET SUBURBAN 1500 200

RIGHT FRONT SPRINGER REAR HOOK MOUNT ABOUT 12.5

FRONT 200 100 OFFSET 100

180 180 INC

180 180 INC



180 180

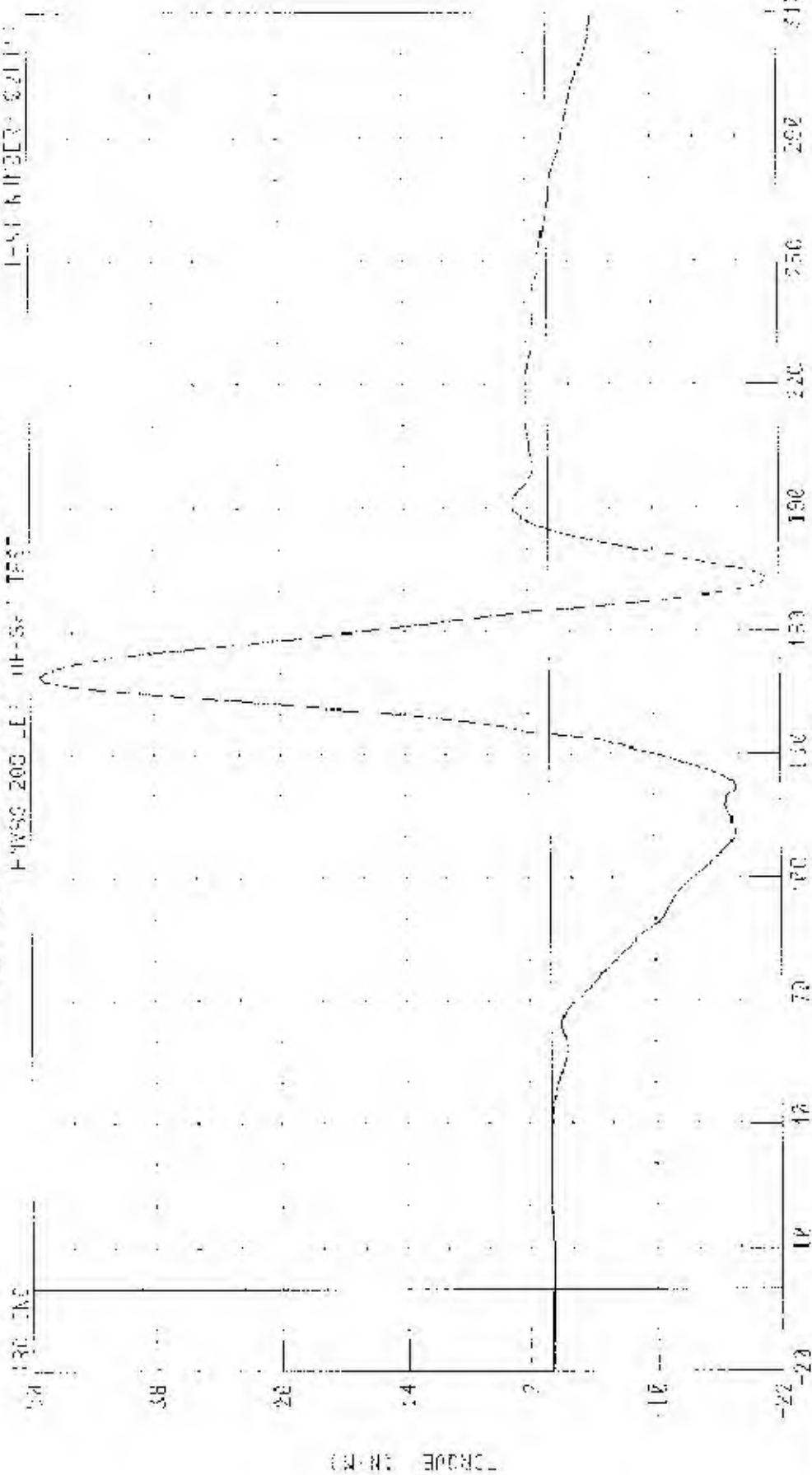
CHANNEL 1-KH2 10.00 0.00 0.00 0.00

PEAK DATA 10.10 1.0 0.10 1.02 10.1 0.10 1.0 0.10 1.0 1.0

LC0104 / 2003 CHEVROLET CLIPPER 1530 241

RIGHT FRONT PASSENGER SEAT POSITION

FRONT 200 LBS. 10-50-175

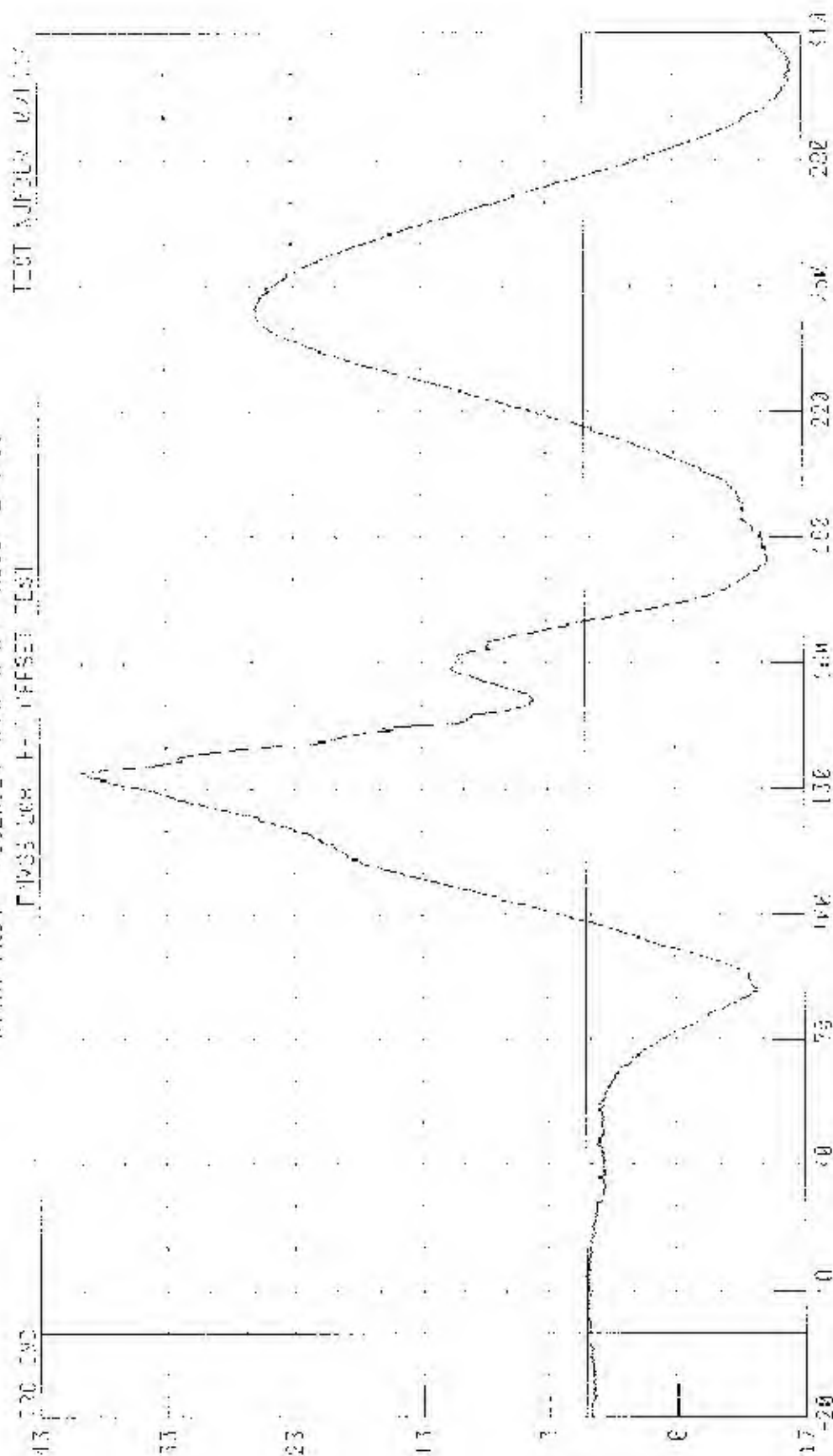


CHANNEL WFKY12 MILLER 5H CLASS 604

PLAF 0010 48 98 4 8 9 149 30 MS; 22.72 N 1 W 172 00 MS

230104 / 2600 OFFVOLT SUBURBAN 2500 2.1
RIGHT FRONT PASSENGER AREA "MTHA" ABOUT 2 1/2

1955 DODGE F-1 OFFSET TEST



CHUNKS - VOLTAGE 11-01-01 CLASS 230

FILE DATA 2.00 4.1 0 1.1 1.0 5.0 1.33 H N 0 361 84 00

TIME (MS)

13 12 11 10 9 8 7 6 5 4 3 2 1 0

0 50 100 150 200 250 300

0 50 100 150 200 250 300

0 50 100 150 200 250 300

0 50 100 150 200 250 300

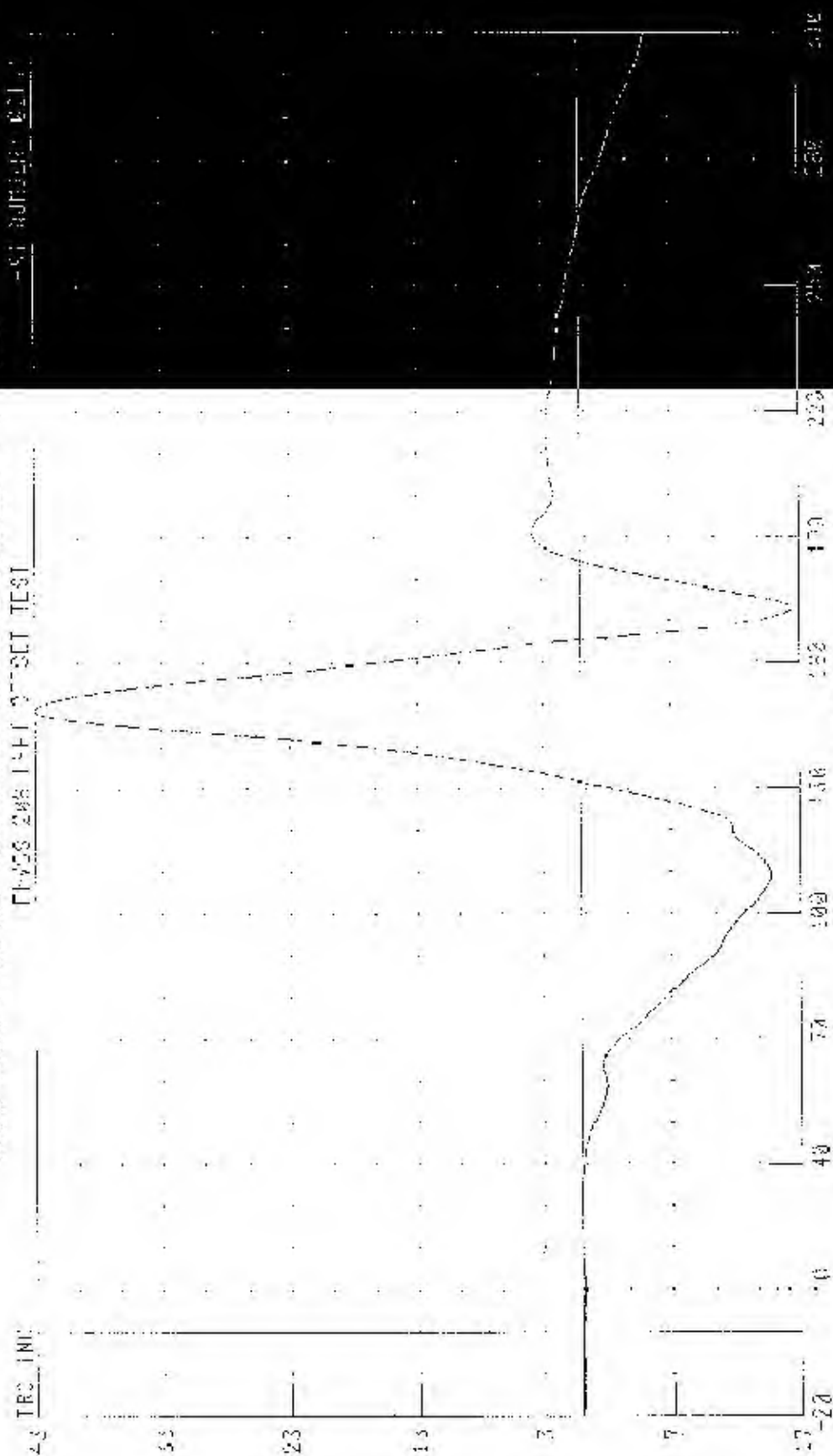
0 50 100 150 200 250 300

0 50 100 150 200 250 300

0 50 100 150 200 250 300

0 50 100 150 200 250 300

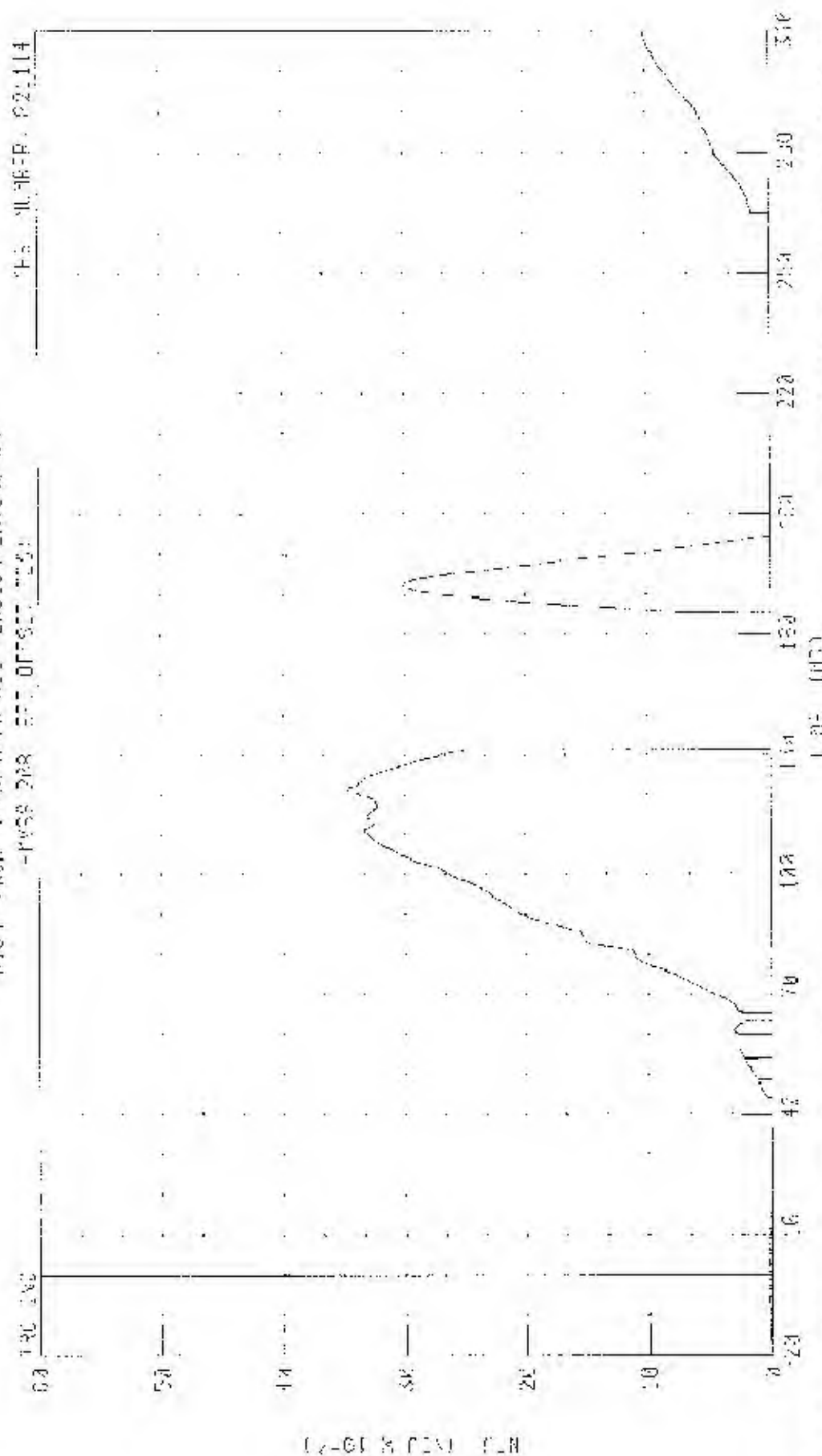
RIGHT FRONT PASSENGER WHEEL HARMFUL OCCUPANT PL. CENVELE FOR H. 8 PM13



CLIP WFL N20-82 FILTER: CH 01355 050

CLIP WFL N20-82 13 20 R P 9 125 24 15 15 45 R P 5 073 24 15

20121 / 2003 CHEVROLET SUBURBAN 1500 2WD
 RIGHT FRONT PASSENGER AIR BAG DEPLOYMENT EXTENSION
 -P258 208 SET OFF SET 223

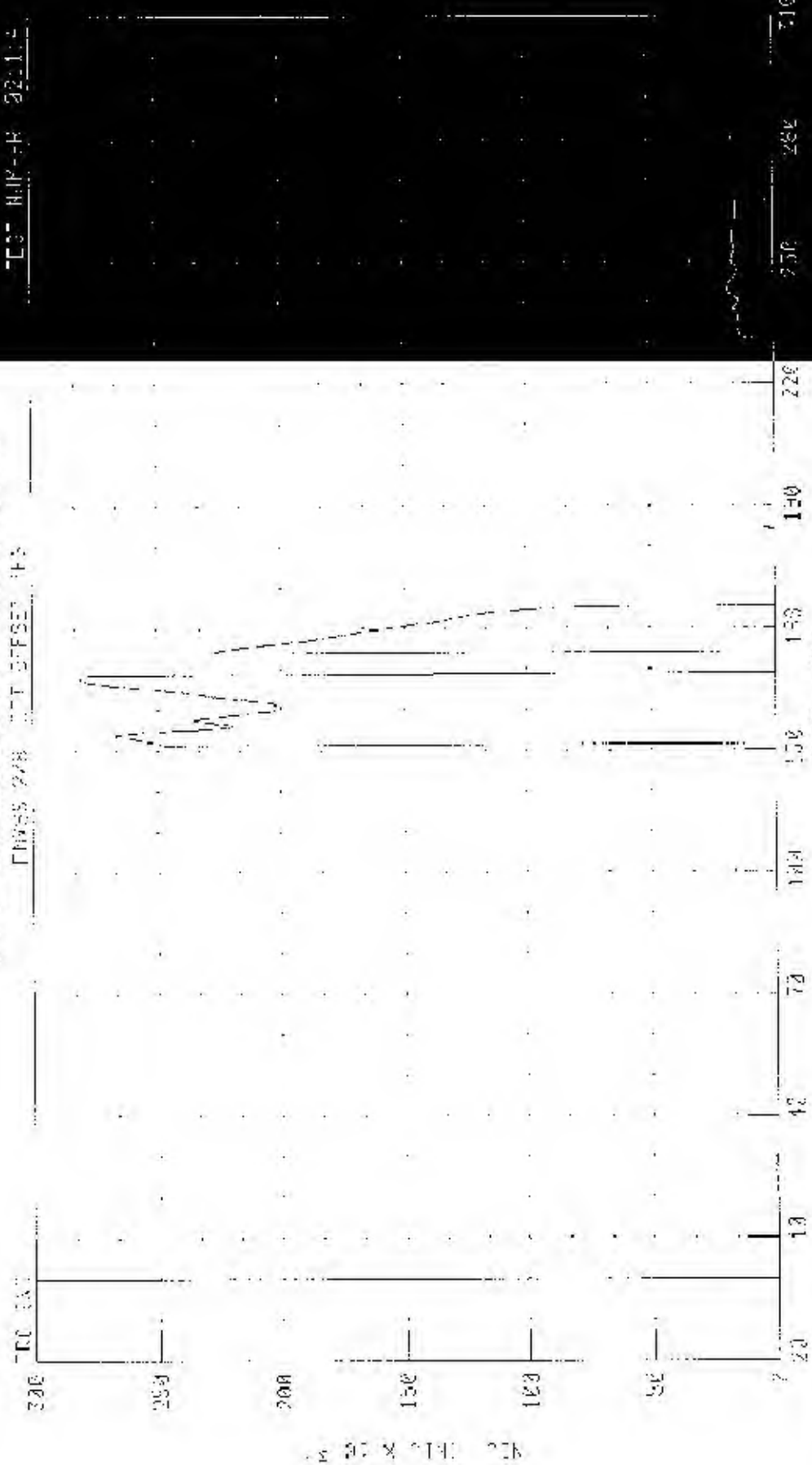


CANAL 1/2 2 -FILTER- 50.000 500

TIME 00:00:00.000 00:00:00.000 00:00:00.000

C20104 / 222144-V30-LET SUBURBAN 1000 290
 B-1-1 POINT PRESSEUR 45 TENCIO 4-1-500K

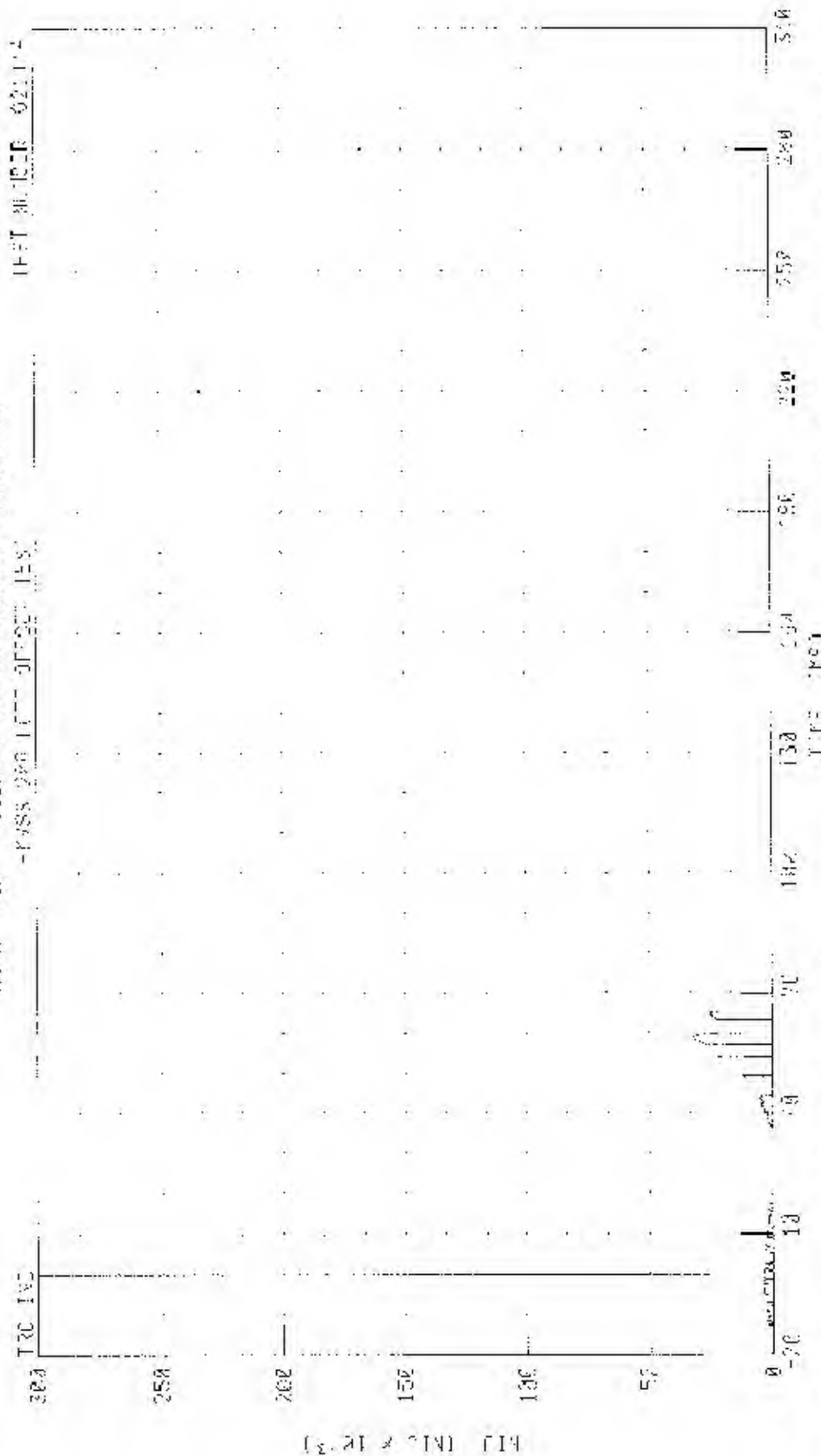
T000 HAP-R 02-11-5



CHANNEL 472 FILTER ON CLASS 000
 PEAK DATA 6.08 MIN @ 140.00 15.00 MIN @ 140.00 15.00 MIN @ 140.00

LETTER 02112

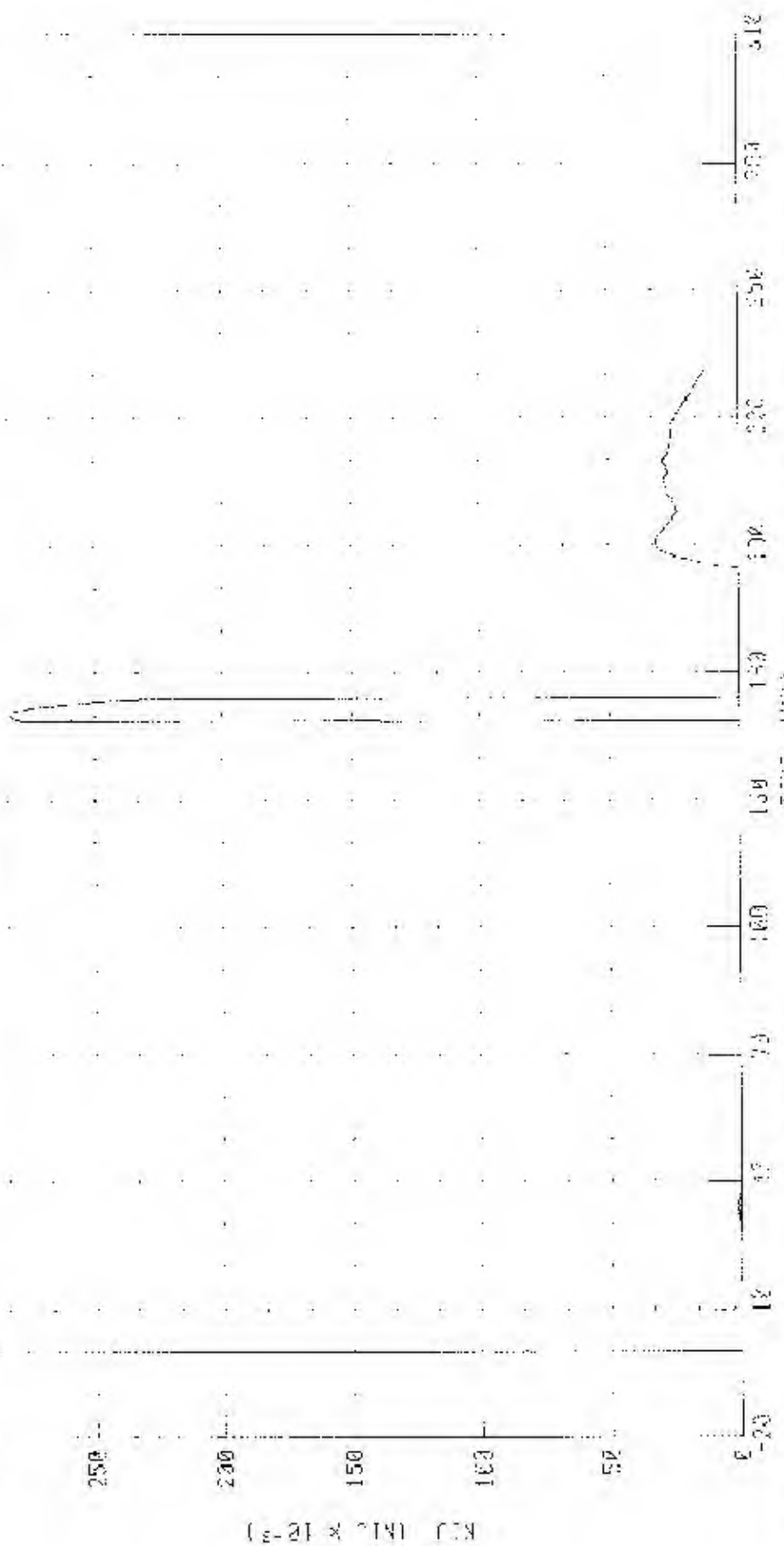
SECRET

CYPKAT, a RILEY
TYPE CO. 11403 003

C10104 / 2000 CHEVROLET SUBURBAN 1500 2wd
 ALCH - 4000 PASSENGER NLT. CONFESSION / EXION
 TRVSS 200 F-100 OFFICE TEST

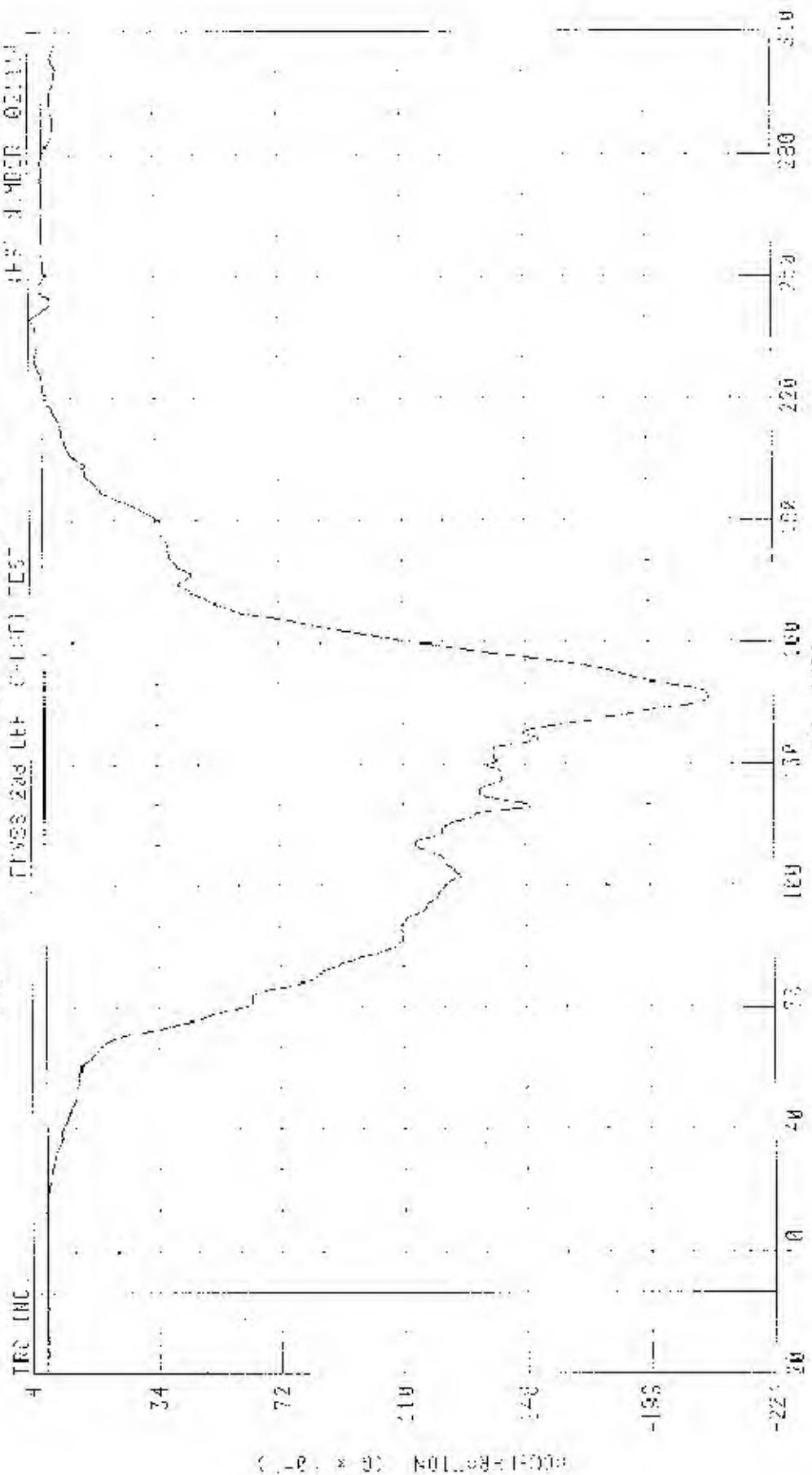
TEST NUMBER 021212

TRC INC.



CHANNEL INCL 2 FILTER: CH CLASH 000 F=04 0014 0.20 NLT. 6 150.45 13, 0 03 NLT. 8 13.55 13

000104 / 2000 CHEVROLET SUBURBAN 1500 2WD
 RIGHT FRONT PASSENGER C1500 X 1518 ACCELERATION
 PRESS 200 LBS 0-100 TEST

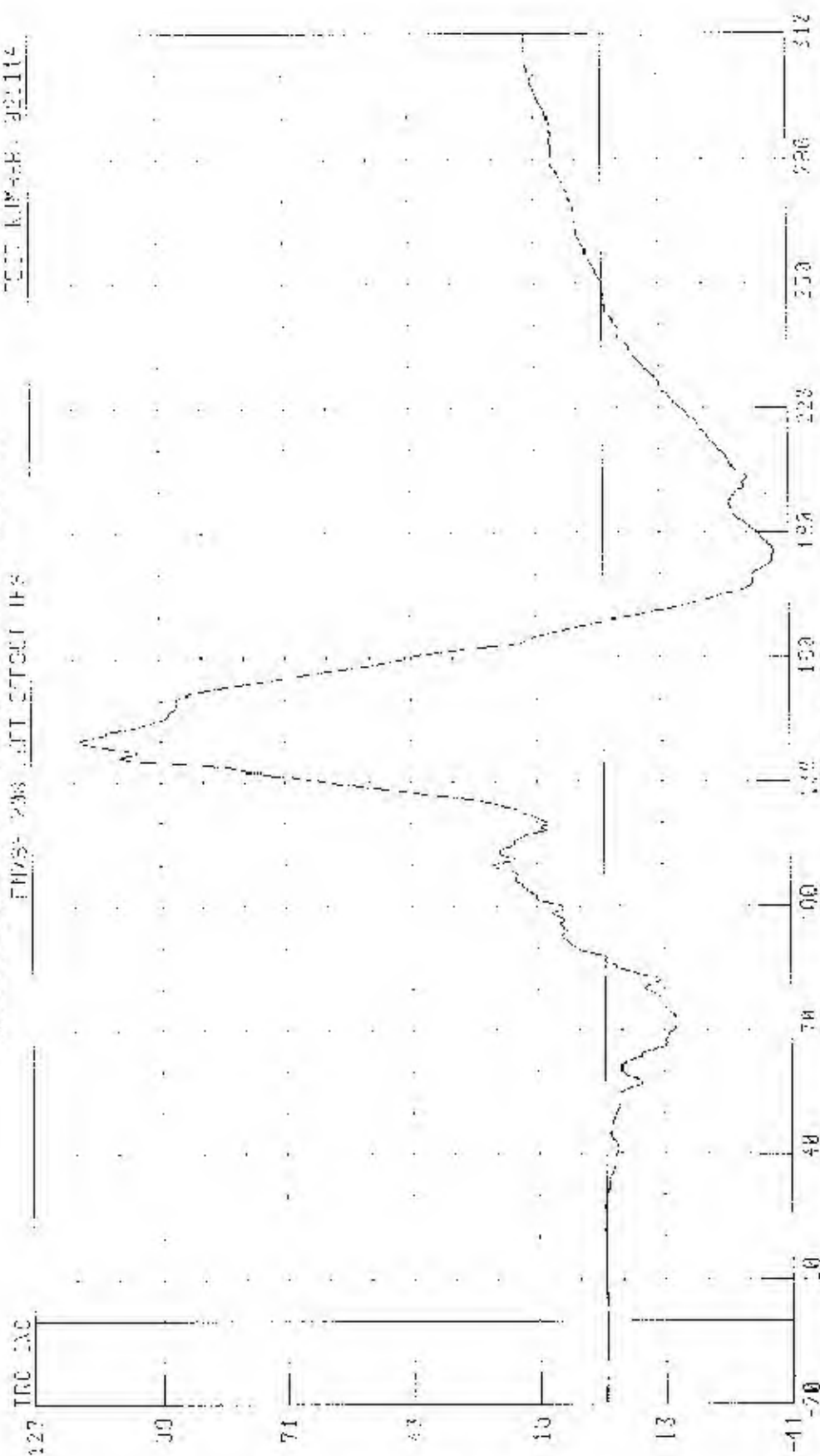


CHANNEL 031000 1.0000 C 0.0000 100
 PRESS 200 LBS 0-100 TEST

CHANNEL 031000 1.0000 C 0.0000 100

2000000 20000000 20000000 20000000
 RIGHT HALF PLOT OF 20000000 20000000

20000000 20000000



CHANNEL 201/20 FILTER C-1 1000000

PEAK DATA: 1000000 1000000 1000000 1000000

000104 2000 01 05 0000 00000000 0000 0000

RIGHT FRONT PASSENGER O-457 RESULTS 0000000000

00000000 00000000

00000000 00000000

00000000



00000000 00000000 00000000 00000000

00000000 00000000 00000000 00000000

00000000

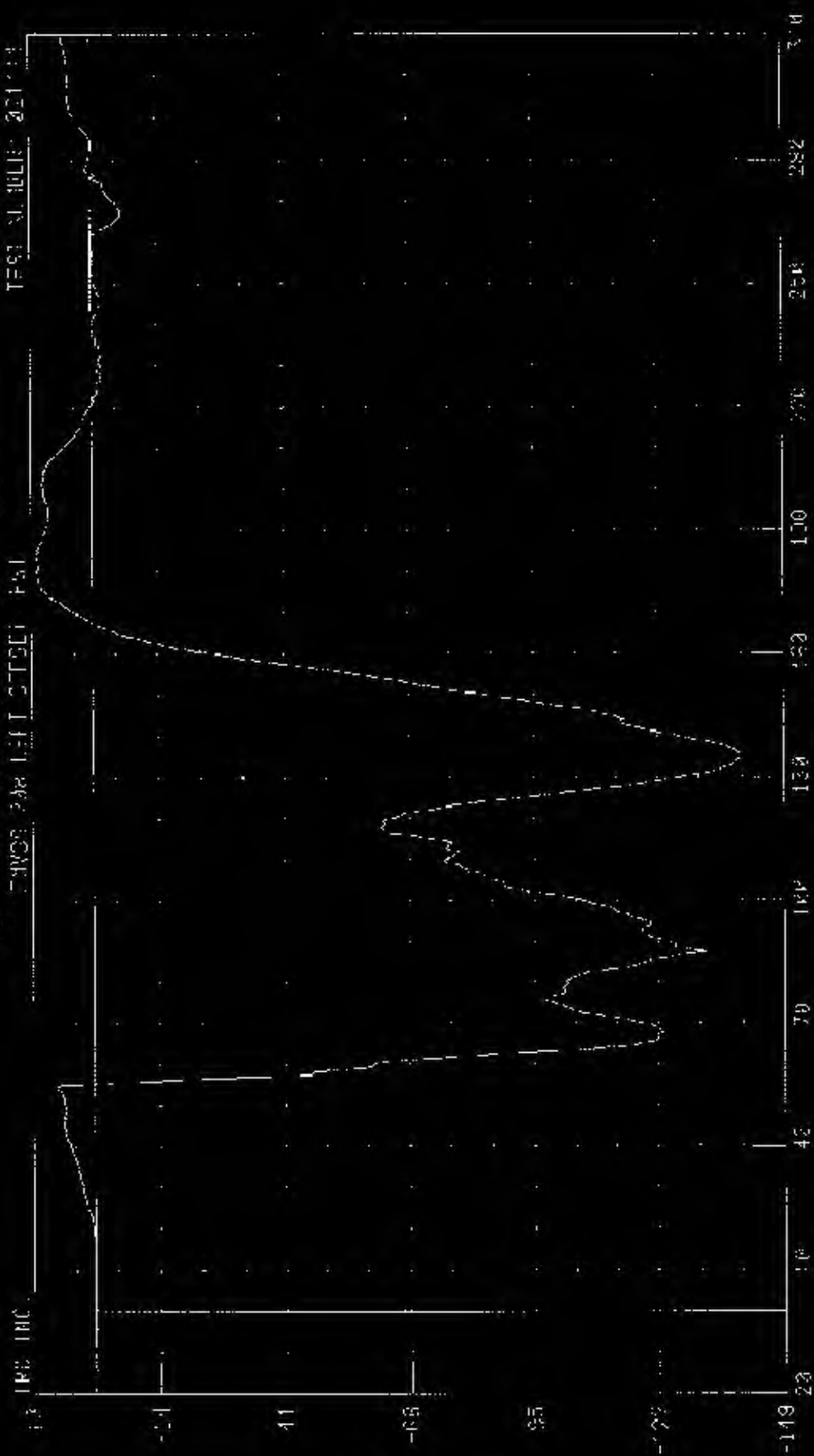
00000000

130104 / 2800 CALIBRATION RUN 8648 1500 280

RIGHT FROM 24000000 LEFT FROM 130000

THROW 200 LEFT STELL PSI

TEST NUMBER 201411



TIME (MS)

PEAK DE P: 110.15 X 2 187.03 75, 2357.47 X 2 184.52 MS

CHANNEL - P272 FILTERED, 31400 002

130104 X 10 15000

TO GET FROM RAGS TO RICHES

24 11:13 11:17 2020 2020/11

[illegible]
$$[K] = [K]_0 + [K]_1$$

NAME	DATE	TIME	CL	SE
CHAVEZ	07/22	01:40	01	33

193.4E N x 33.32 W, -121° 49' N 33.6° E

LETTERS FROM THE EDITOR

11.123 : 27.471 : 13=1

0711-9-10-78865344

MS 520 D-7-2711-1488

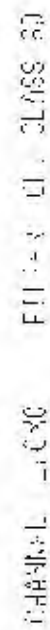
DEPK | 910 | 783 33 66 00 | 03-03-05 | 38 30 MS

[illegible]

CHIEF OF POLICE

PEK H A - 122 C 6 41 02, 1.19 13 15.13 16

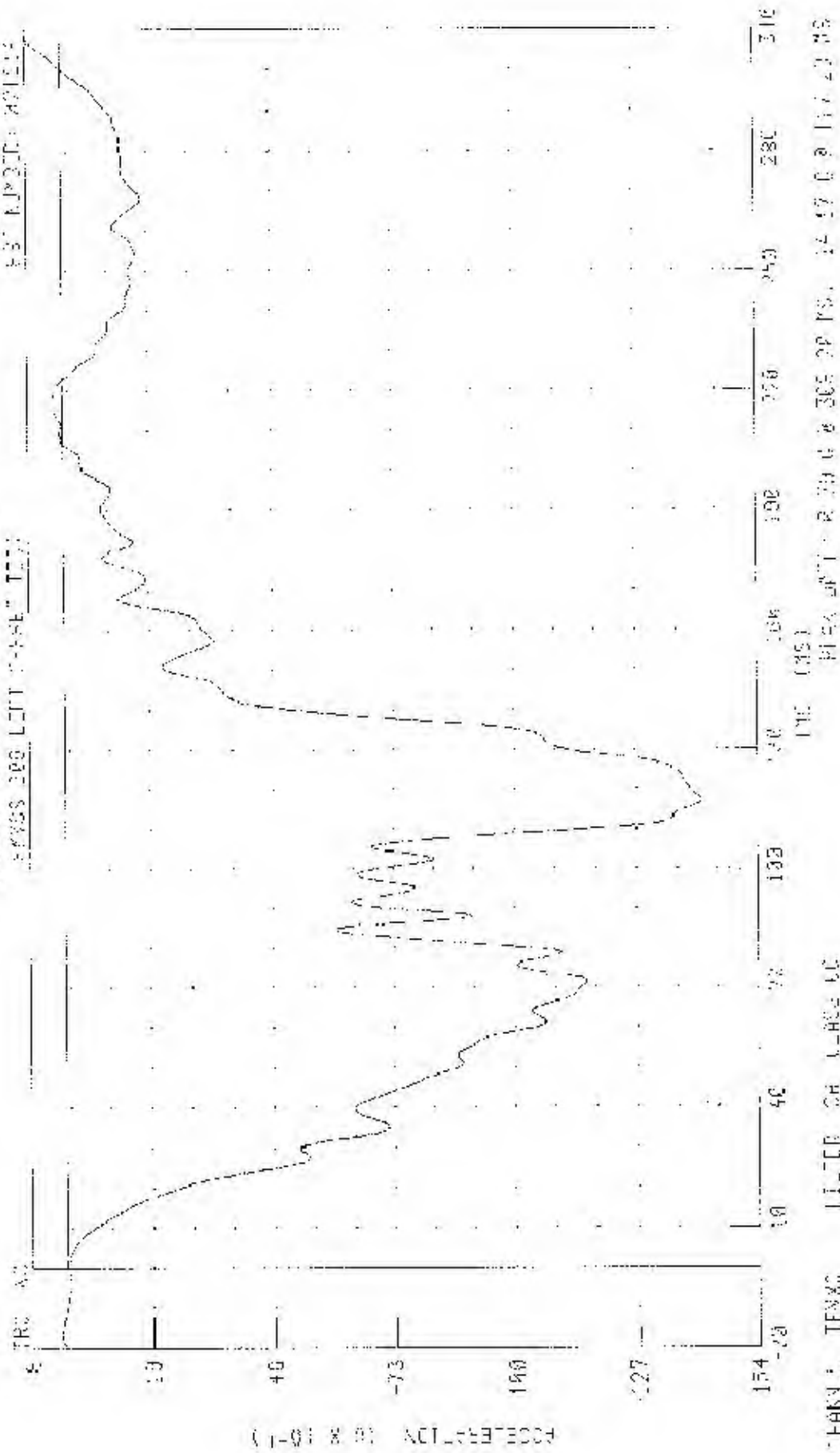
[illegible]

$$\frac{\frac{1}{2} \left(\frac{1}{2} \right)^{\frac{1}{2}}}{\frac{1}{2} \left(\frac{1}{2} \right)^{\frac{1}{2}}}$$


1 RE (12)

THE TOP-X ACCESS LOG

THE FIRST OF SEPTEMBER



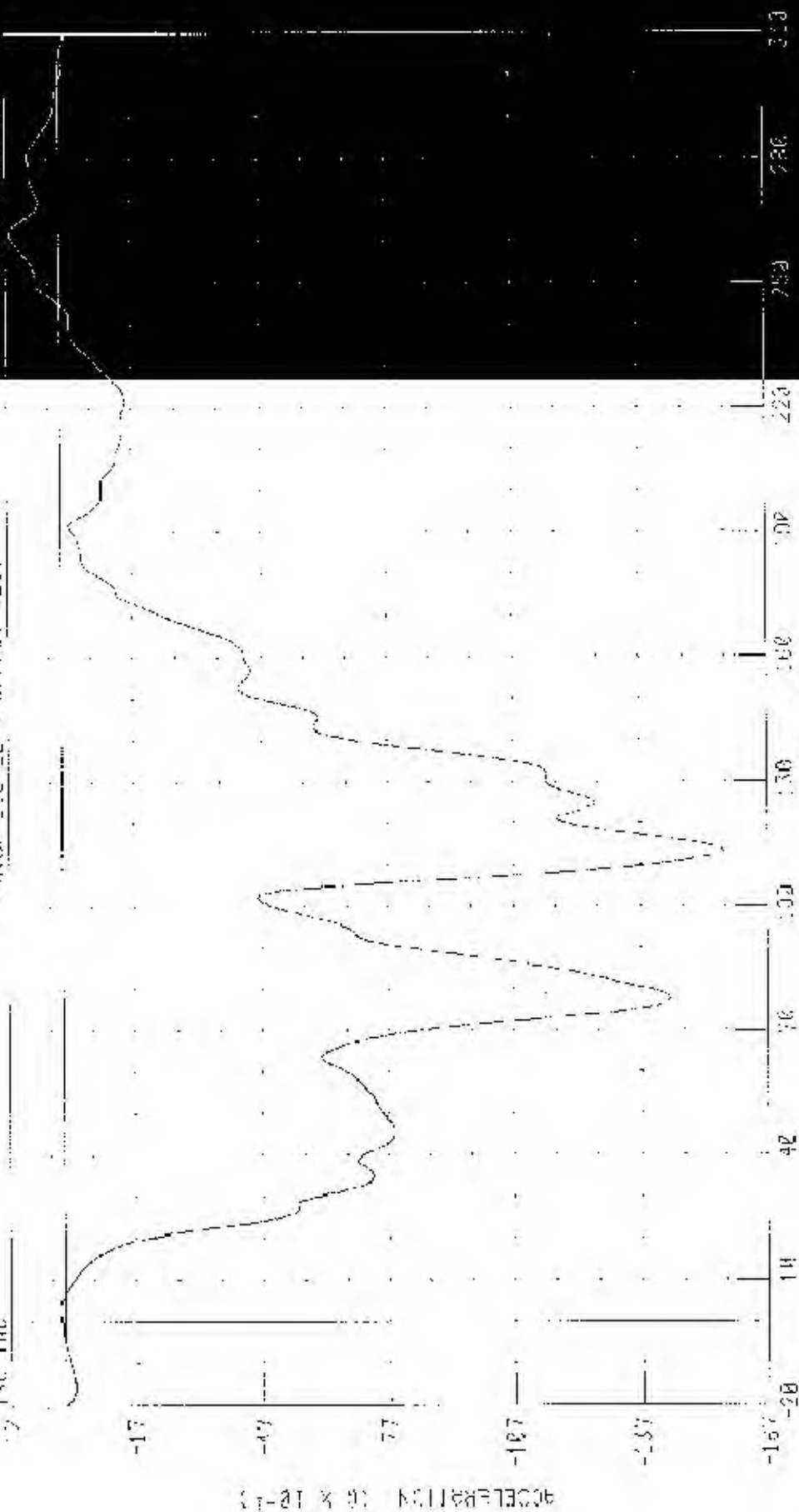
THANKS: TENNIS CLUB

K. G. LEE, J. C. MCNEIL, and M. J. S. AUSTIN

[illegible]

CH-21

TOTAL NUMBER 2014

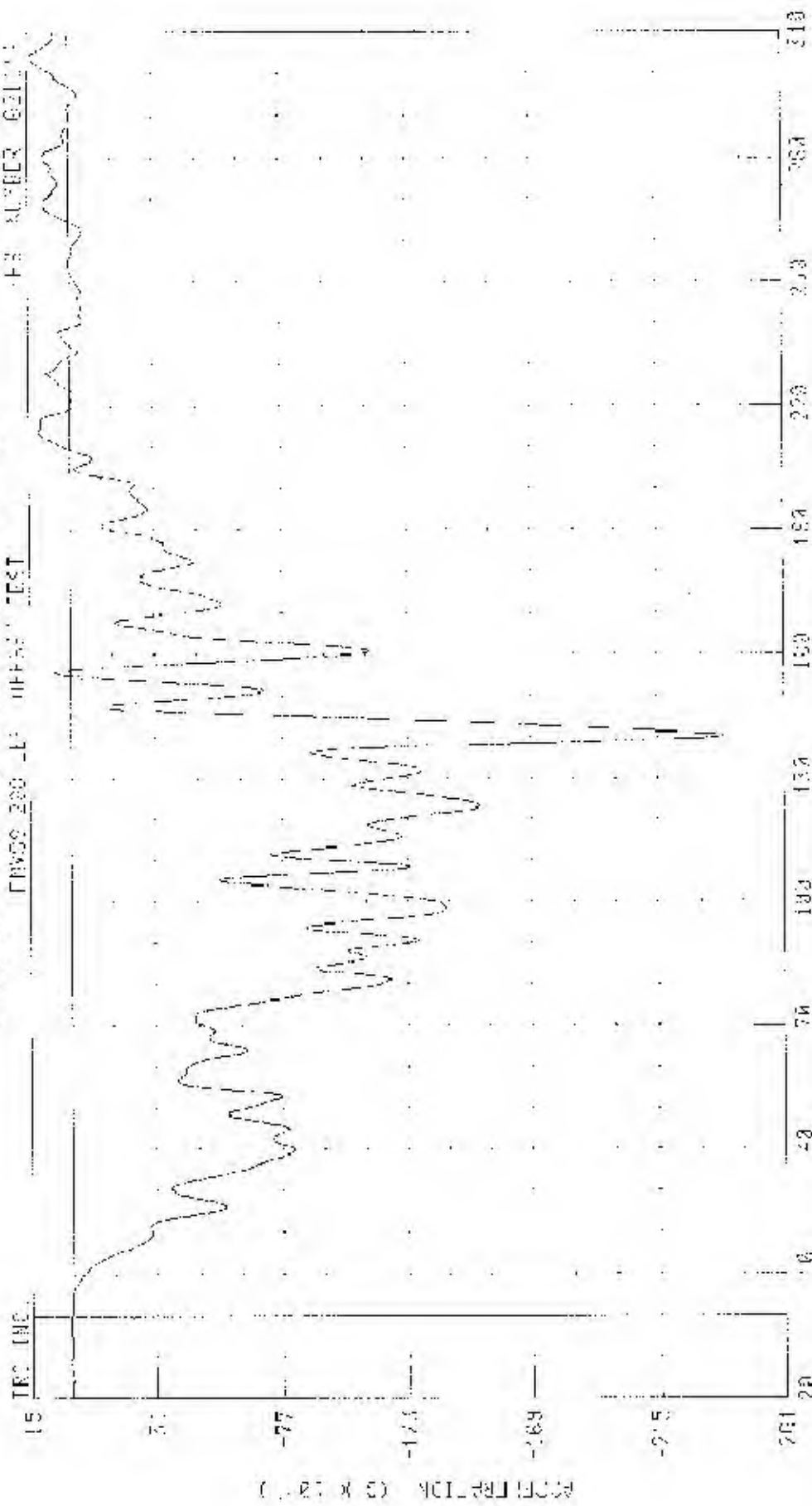


151

[illegible]

FILIPPO FALCONE

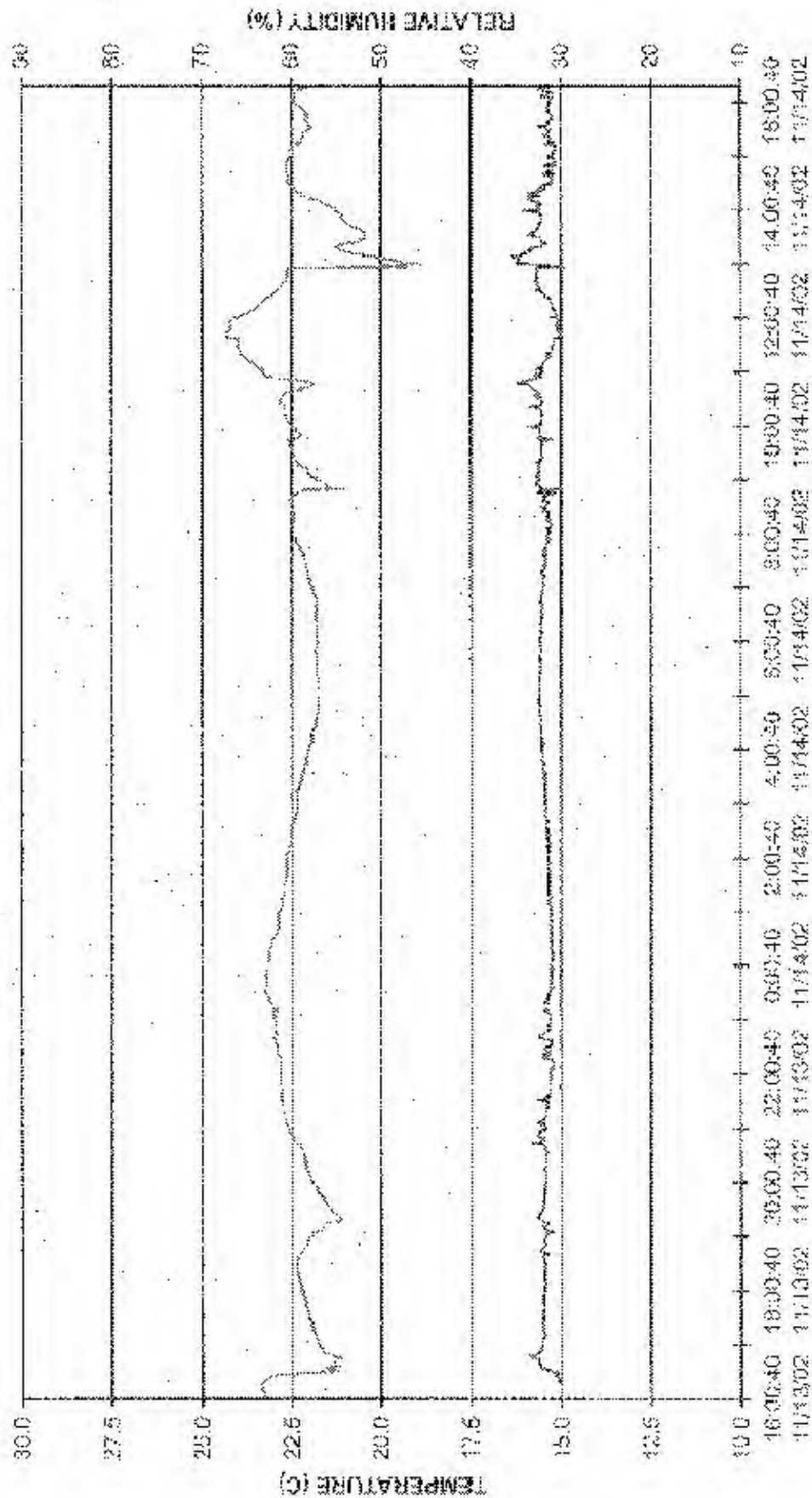
(2012) / 2023 GREYHOLE SUBURBAN (120 LK)
 INSTRUMENT: FIVE-1 CENTERLINE X 8*12 PU-HARTICK



CHANNEL: JCLV6 FIVE-1F L4 CL400 L7
 PEAK HIGH: 1.25 S @ 384.03 MS; -73.94 S @ 140.45 MS

TEMPERATURE AND RELATIVE HUMIDITY CHART 021114

TEMPERATURE (C) RELATIVE HUMIDITY (%)



TIME AND DATE

Section 7

Photographs

List of Photographs

<u>Image</u>	<u>Image Title</u>	<u>Page</u>
1	Pre-Test Front View	7-5
2	Post-Test Front View	7-6
3	Pre-Test Left Side View	7-7
4	Post-Test Left Side View	7-8
5	Pre-Test Right Side View	7-9
6	Post-Test Right Side View	7-10
7	Pre-Test Left Front Three-Quarter View	7-11
8	Post-Test Left Front Three-Quarter View	7-12
9	Pre-Test Right Rear Three-Quarter View	7-13
10	Post-Test Right Rear Three-Quarter View	7-14
11	Pre-Test Overhead View	7-15
12	Post-Test Overhead View	7-16
13	Pre-Test Windshield View	7-17
14	Post-Test Windshield View	7-18
15	Pre-Test Engine Compartment View	7-19
16	Post-Test Engine Compartment View	7-20
17	Pre-Test Steering Column and Firewall - Under Hood View	7-21
18	Post-Test Steering Column and Firewall - Under Hood View	7-22
19	Pre-Test Steering Box View	7-23
20	Post-Test Steering Box View	7-24
21	Pre-Test Steering Column and Firewall - Interior View	7-25
22	Post-Test Steering Column and Firewall - Interior View	7-26
23	Steering Column Position View	7-27
24	Pre-Test Front Underbody View	7-28
25	Post-Test Front Underbody View	7-29
26	Pre-Test Mid Underbody View	7-30
27	Post-Test Mid Underbody View	7-31
28	Pre-Test Rear Underbody View	7-32
29	Post-Test Rear Underbody View	7-33

List of Photographs, Continued

<u>Image</u>	<u>Image Title</u>	<u>Page</u>
30	Pre-Test Fuel Tank View	7-34
31	Post-Test Fuel Tank View	7-35
32	Pre-Test Fuel Lines View	7-36
33	Post-Test Fuel Lines View	7-37
34	Pre-Test Fuel Filler Neck - View 1	7-38
35	Post-Test Fuel Filler Neck - View 1	7-39
36	Pre-Test Fuel Filler Neck - View 2	7-40
37	Post-Test Fuel Filler Neck - View 2	7-41
38	Pre-Test Fuel Filler Cap View	7-42
39	Post-Test Fuel Filler Cap View	7-43
40	Pre-Test Offset Barrier Face Front View	7-44
41	Post-Test Offset Barrier Face Front View	7-45
42	Pre-Test Offset Barrier Face Left Side View	7-46
43	Post-Test Offset Barrier Face Left Side View	7-47
44	Pre-Test Offset Barrier Face Right Side View	7-48
45	Post-Test Offset Barrier Face Right Side View	7-49
46	Pre-Test Offset Barrier Face Overhead View	7-50
47	Post-Test Offset Barrier Face Overhead View	7-51
48	Pre-Test Driver Dummy Front View	7-52
49	Post-Test Driver Dummy Front View	7-53
50	Pre-Test Driver Dummy Position View	7-54
51	Post-Test Driver Dummy Position View	7-55
52	Pre-Test Driver Dummy & Vehicle Intrusion View	7-56
53	Post-Test Driver Dummy & Vehicle Intrusion View	7-57
54	Pre-Test Passenger Dummy Front View	7-58
55	Post-Test Passenger Dummy Front View	7-59
56	Pre-Test Passenger Dummy Position View	7-60
57	Post-Test Passenger Dummy Position View	7-61
58	Pre-Test Passenger Dummy & Vehicle View	7-62

List of Photographs, Continued

<u>Image</u>	<u>Image Title</u>	<u>Page</u>
59	Post-Test Passenger Dummy & Vehicle Intrusion View	7-63
60	Post-Test Driver Dummy View	7-64
61	Post-Test Driver Dummy Head Contact - View 1	7-65
62	Post-Test Driver Dummy Head Contact - View 2	7-66
63	Pre-Test Driver Dummy Knee Bolster View	7-67
64	Post-Test Driver Dummy Knee Contact View	7-68
65	Post-Test Passenger Dummy View	7-69
66	Post-Test Passenger Dummy Head Contact - View 1	7-70
67	Post-Test Passenger Dummy Head Contact - View 2	7-71
68	Pre-Test Passenger Dummy Knee Bolster View	7-72
69	Post-Test Passenger Dummy Knee Contact View	7-73
70	Post-Test Vehicle on Static Rollover Device - 90° View	7-74
71	Pre-Test Vehicle Ballast View	7-75
72	Pre-Test Vehicle Certification and Recommended Tire Pressure Label View	7-76
73	Pre-Test Vehicle Window Sticker	7-77

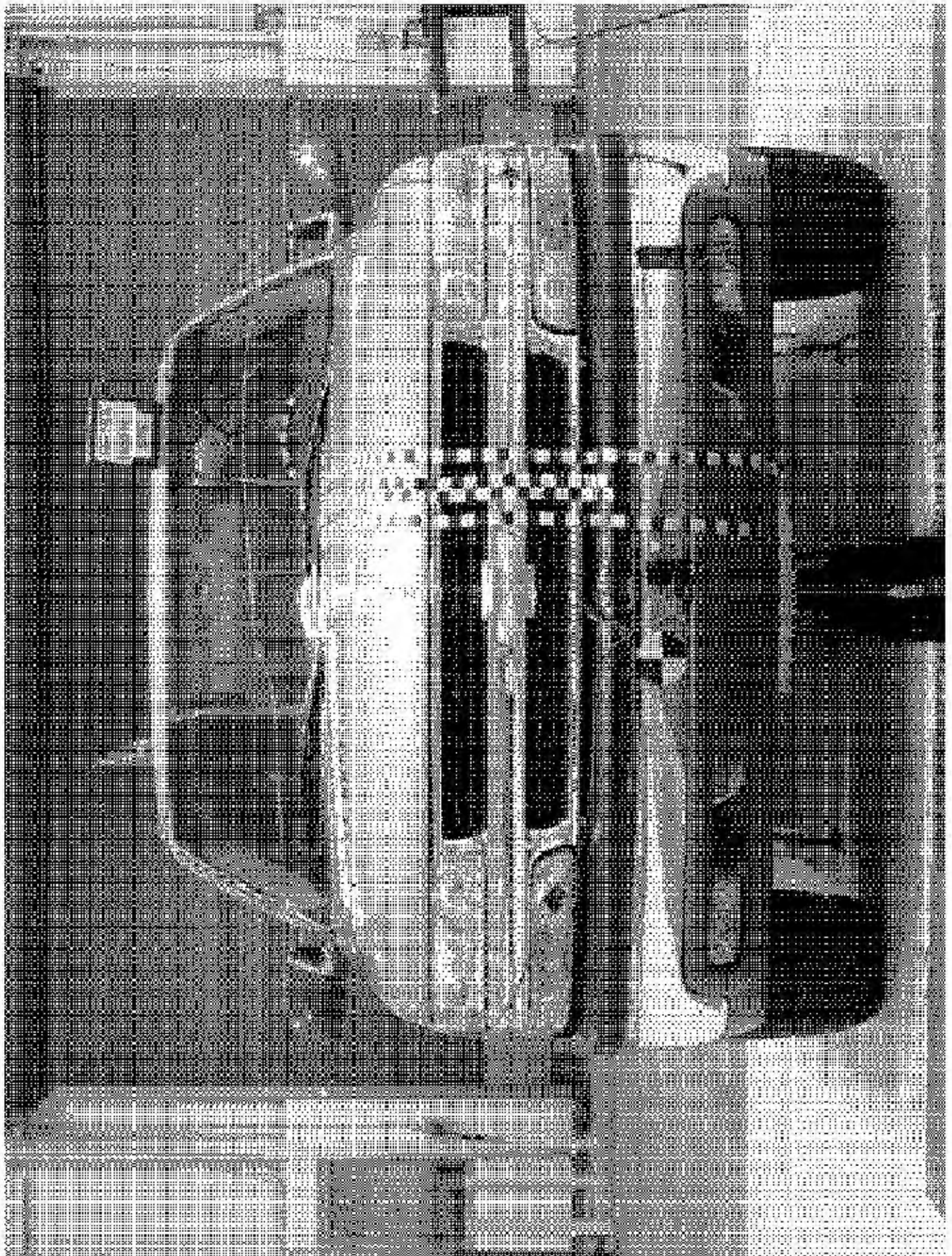


Image 1 Pre-Test Front View

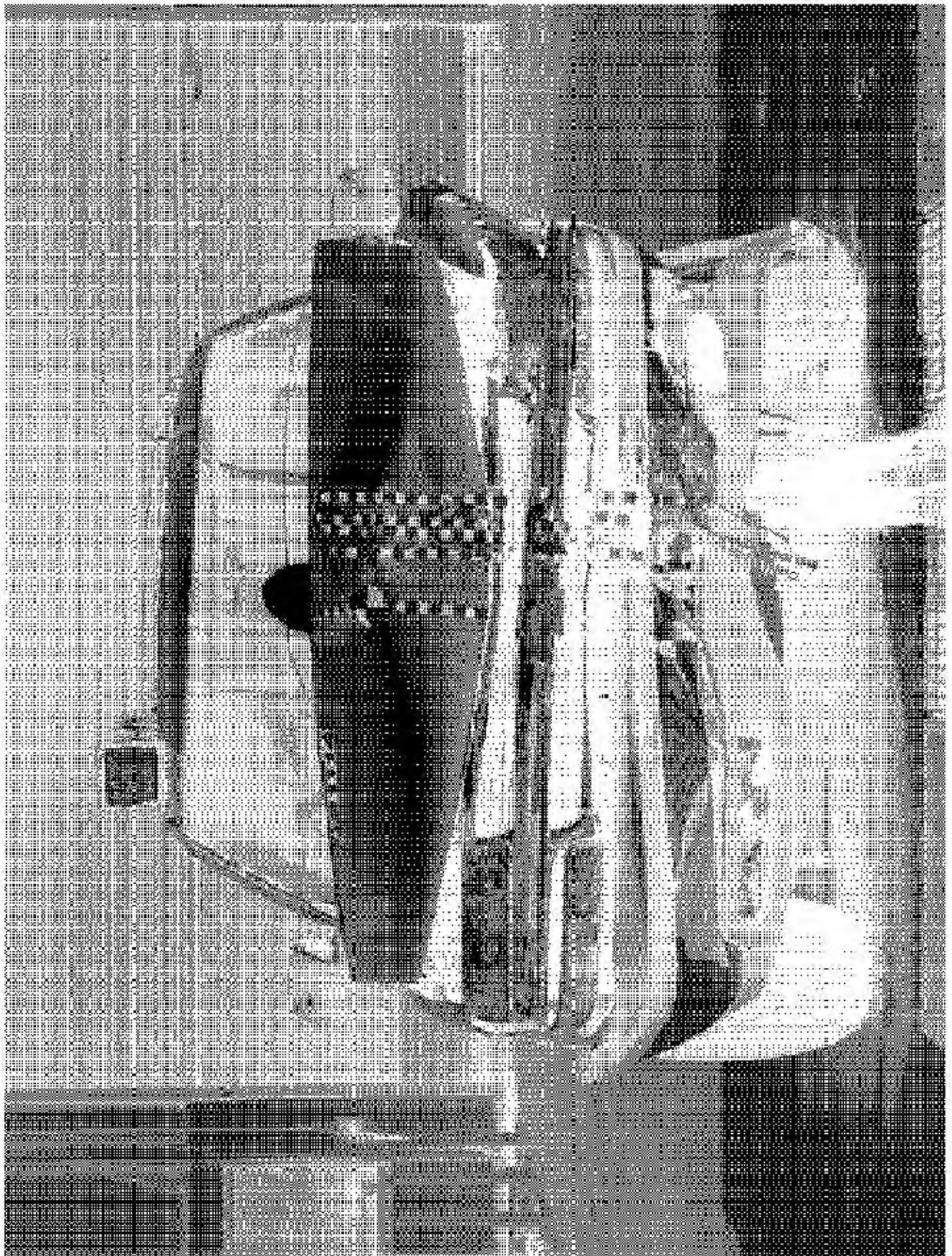


Image 2 Post-Test Front View

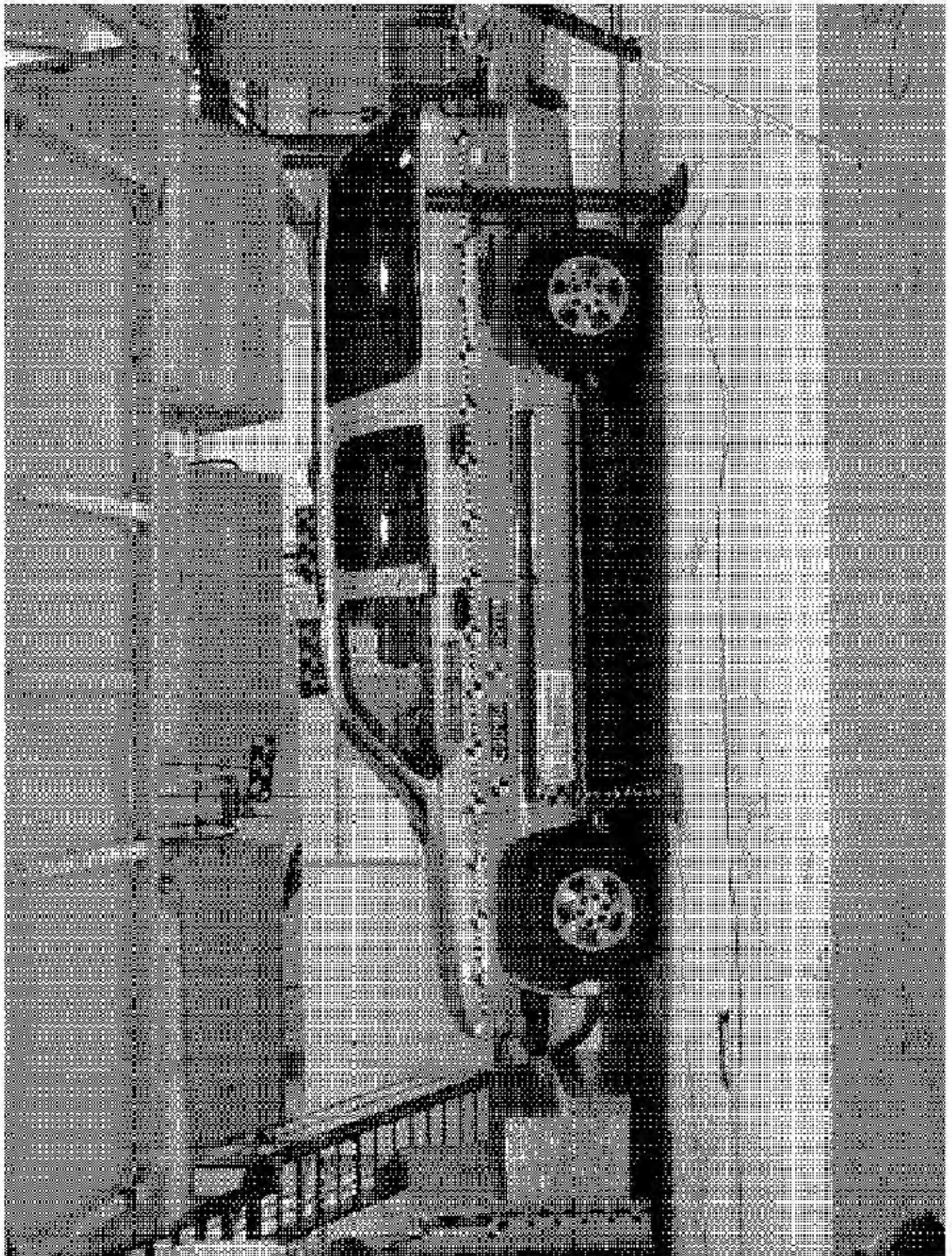


Image 3 Pre-Test Left Side View

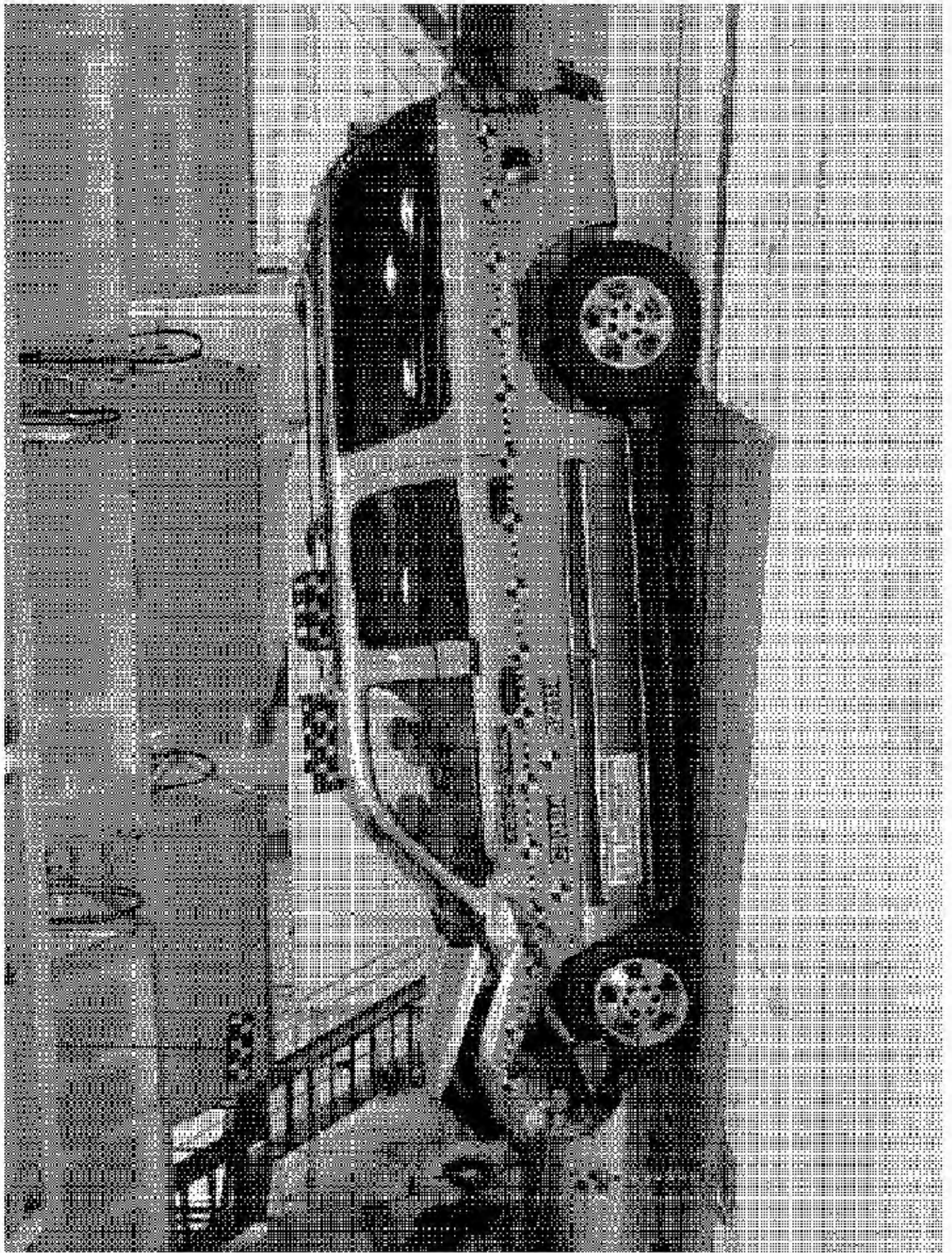


Image 4 Post-Test Left Side View

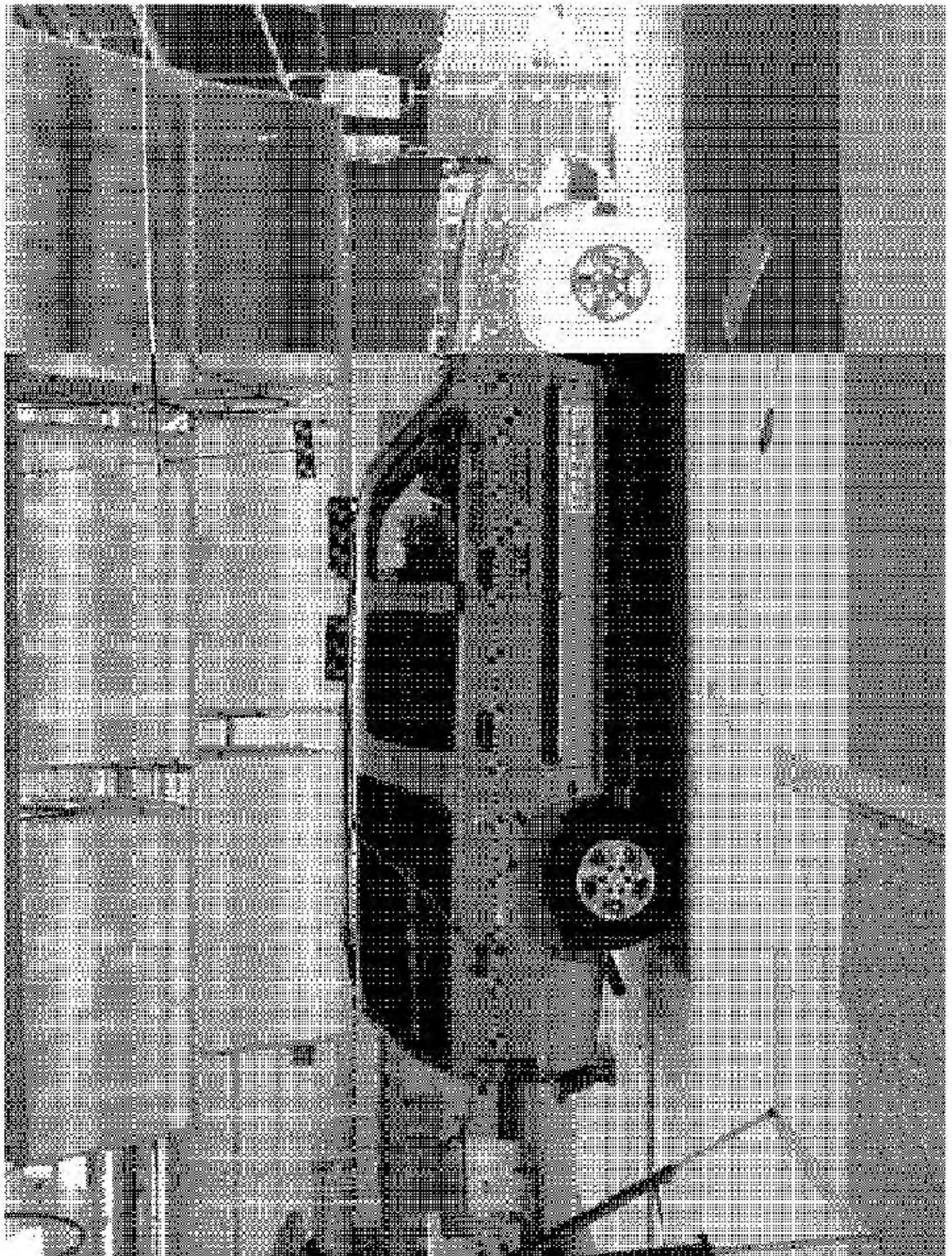


Image 5 Pre-Test Right Side View

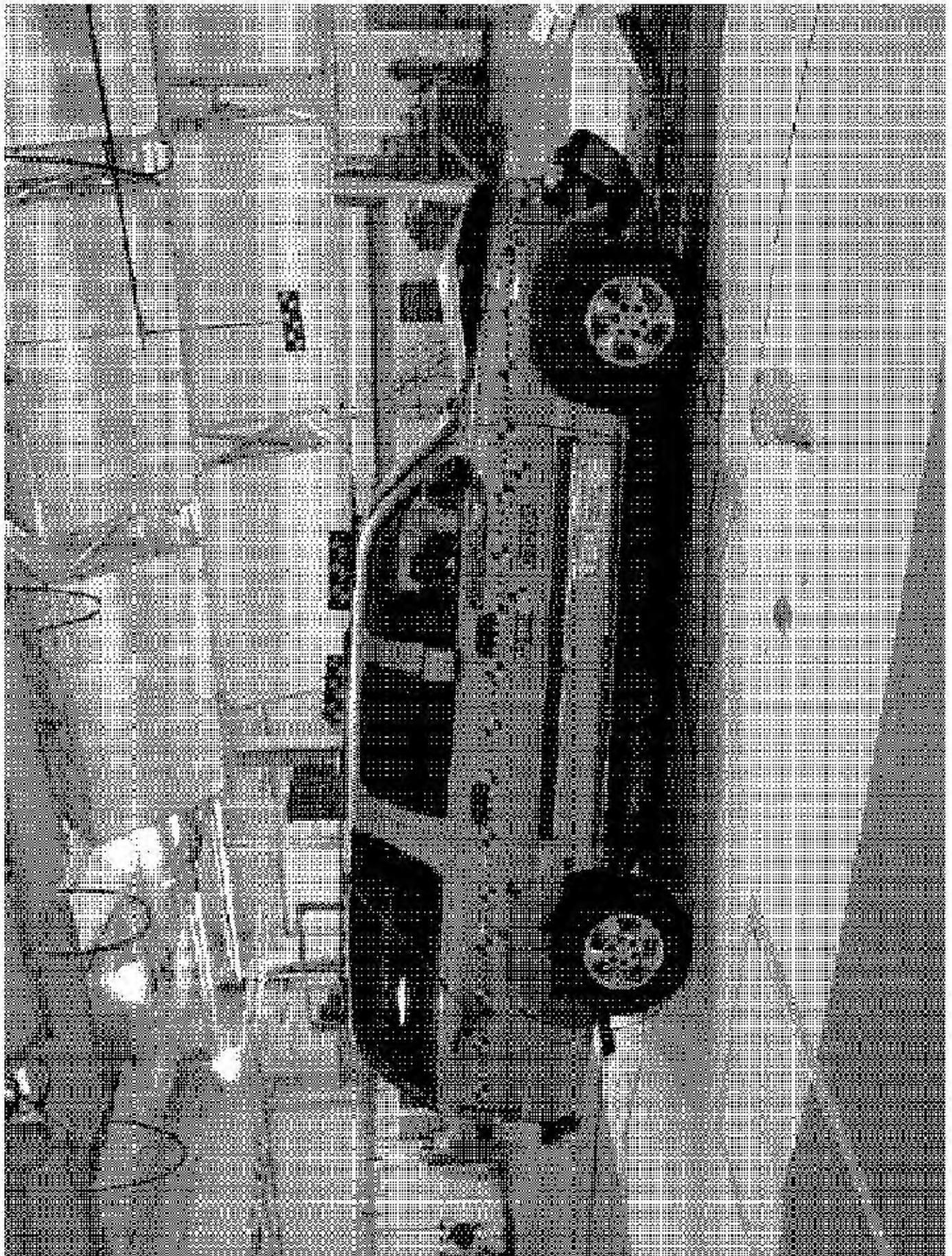


Image 6 Post-Test Right Side View

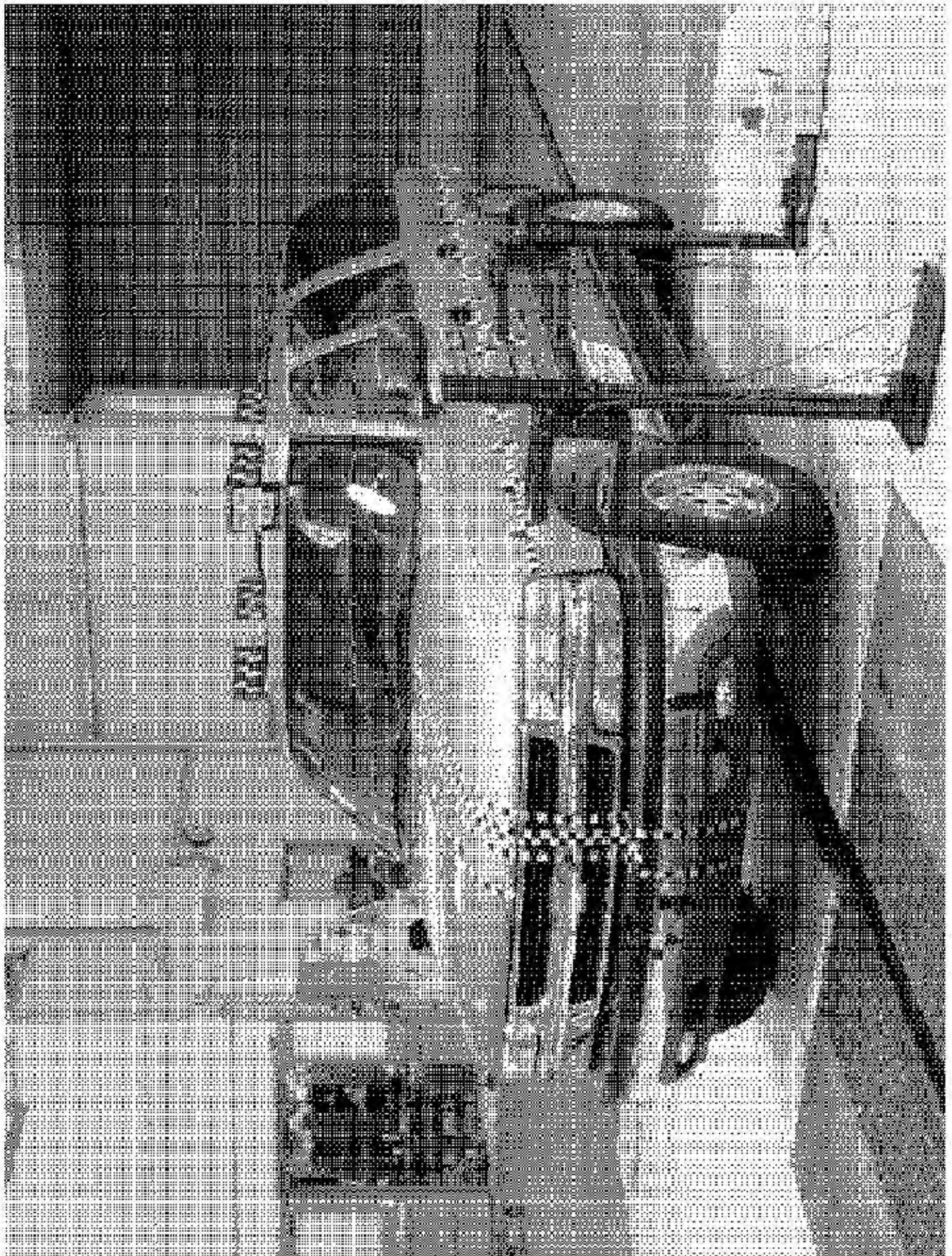


Image 7 Pre-Test Left Front Three-Quarter View

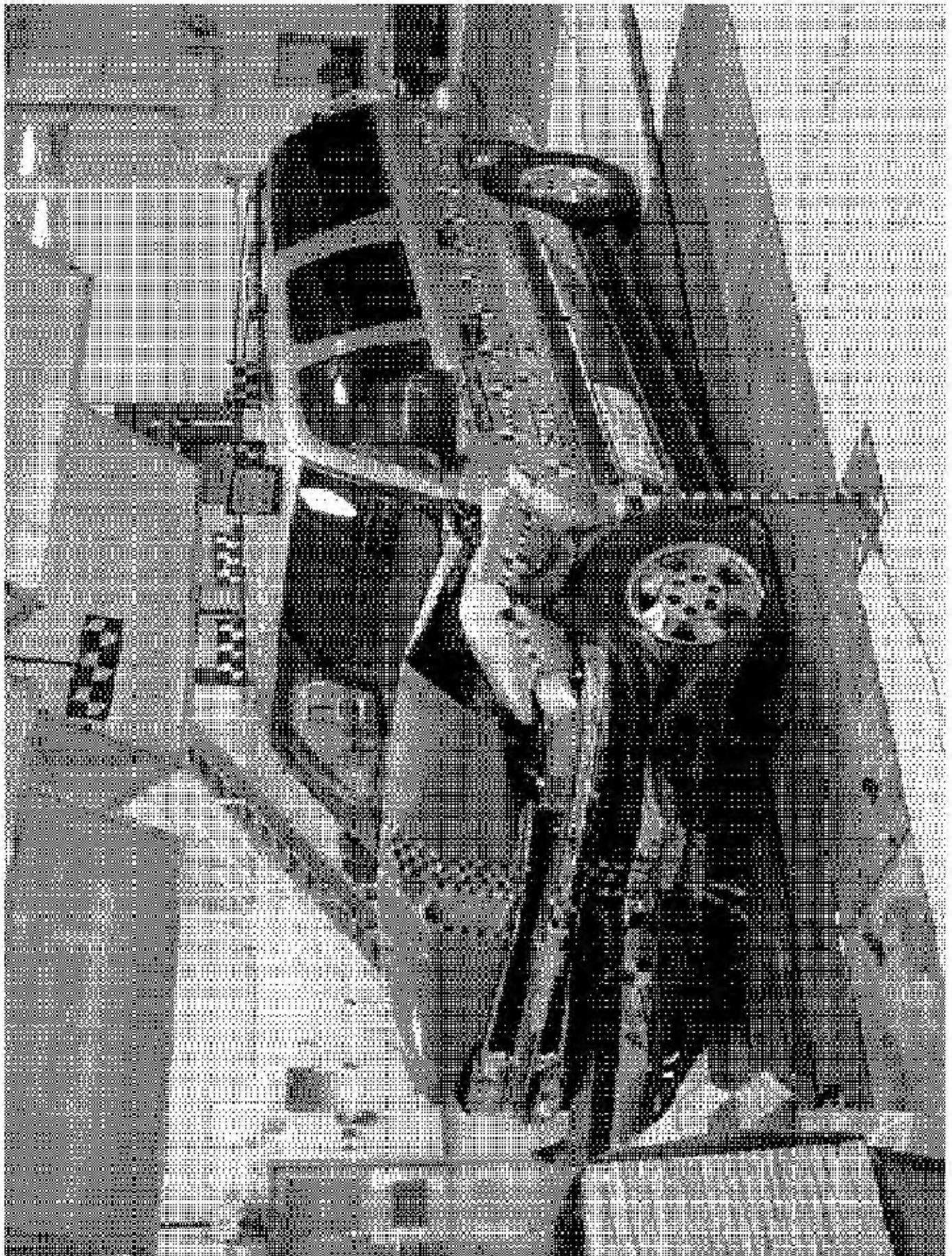


Image 8 Post-Test Left Front Three-Quarter View

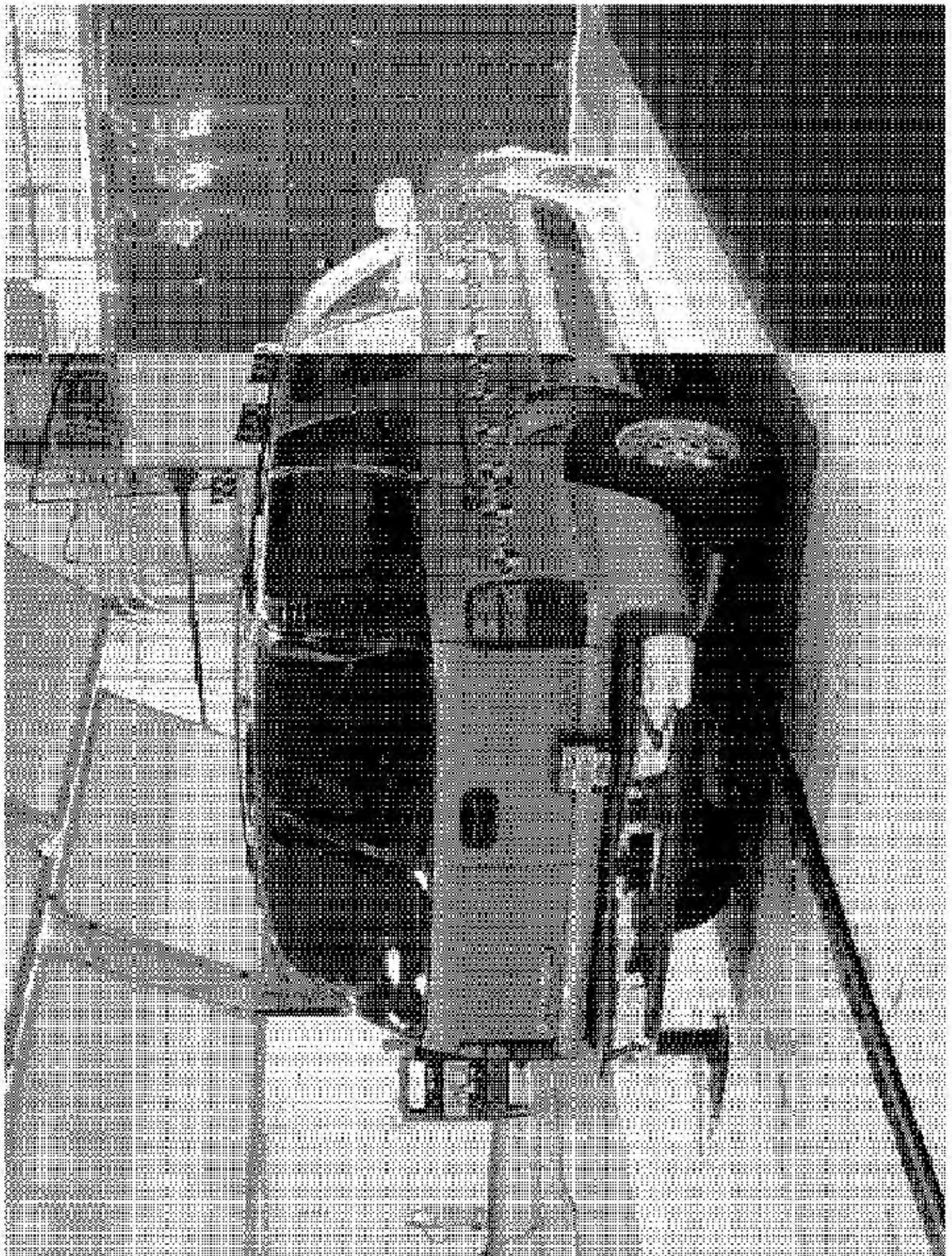


Image 9 Pre-Test Right Rear Three-Quarter View

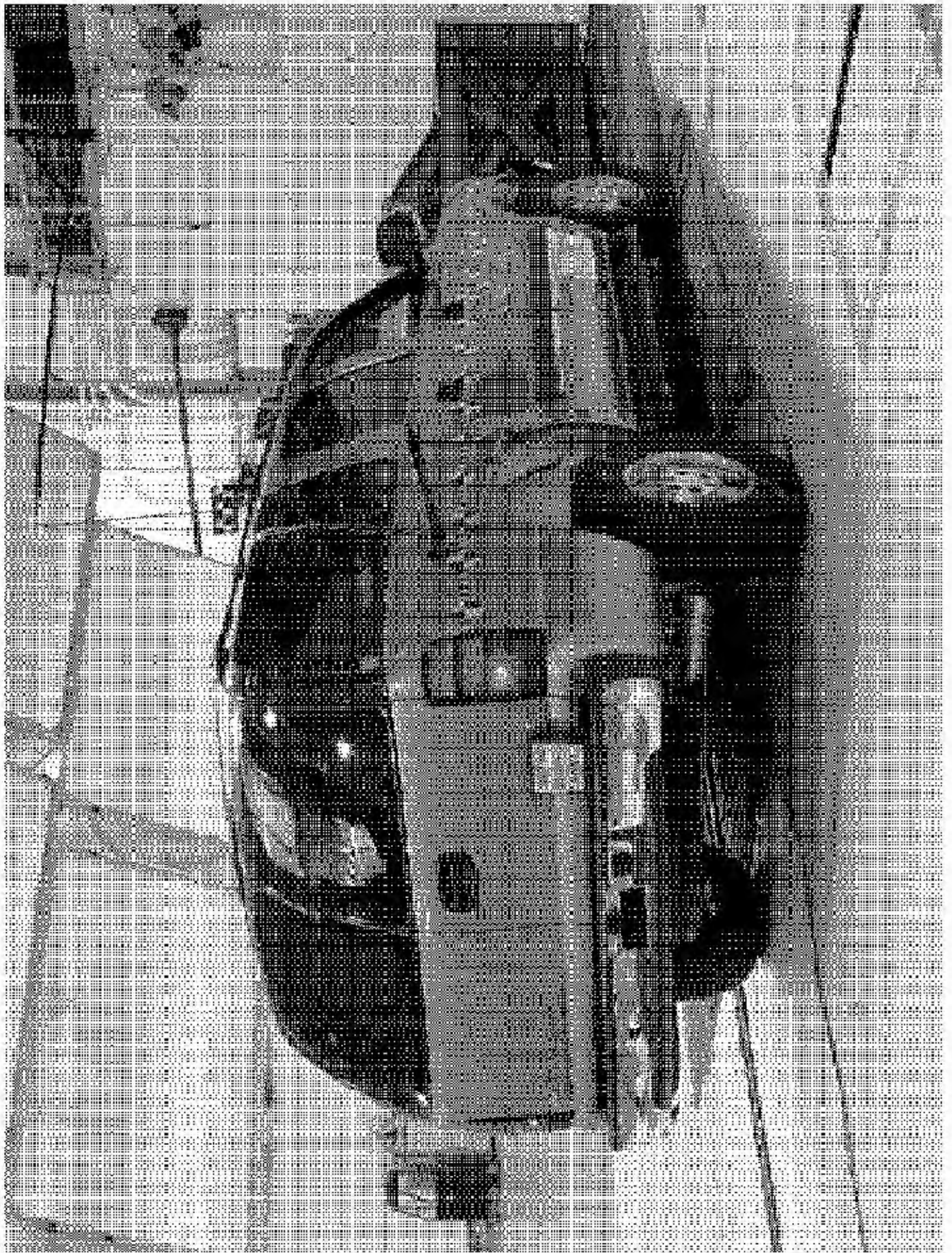


Image 10 Post-Test Right Rear Three-Quarter View

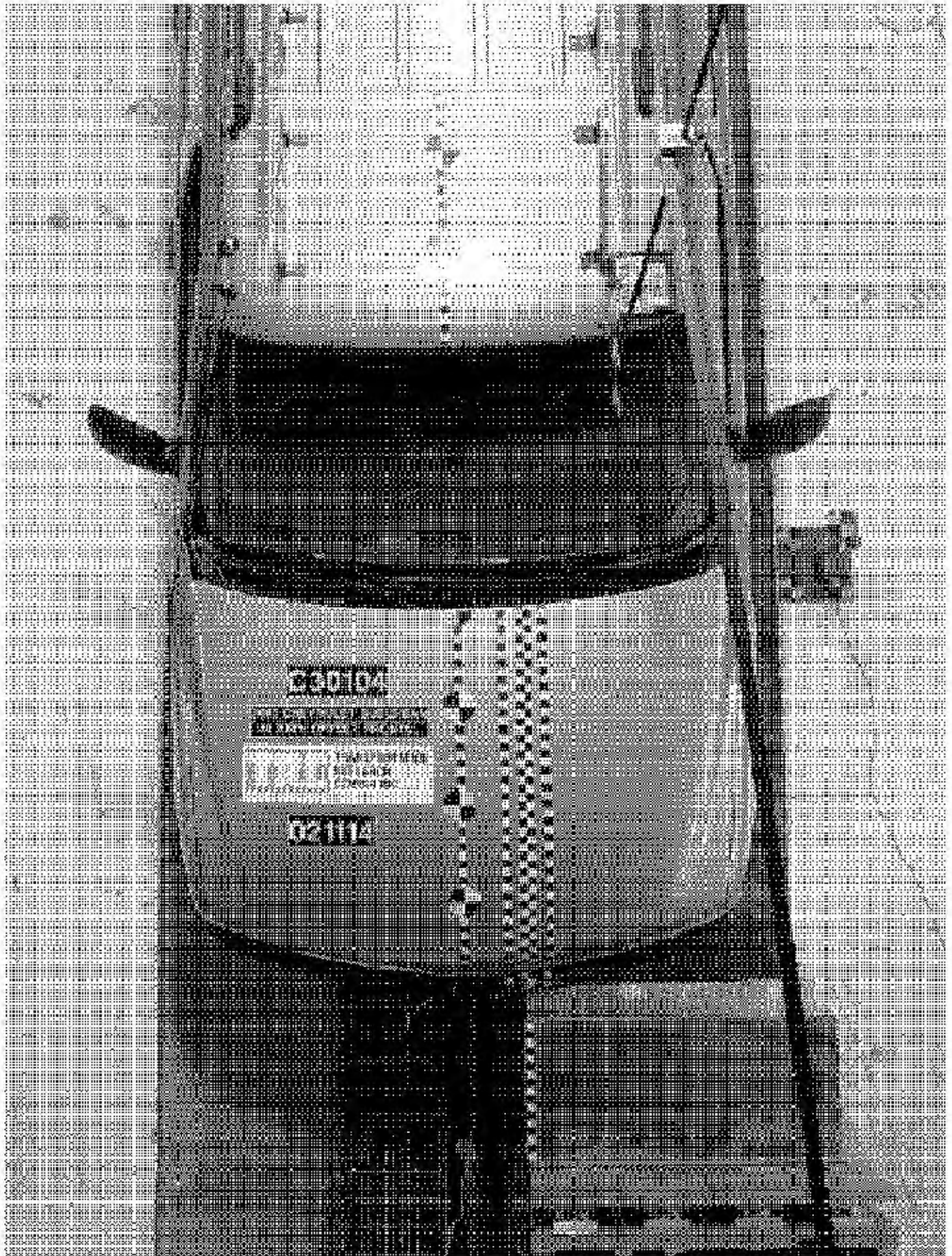


Image 11 Pre-Test Overhead View

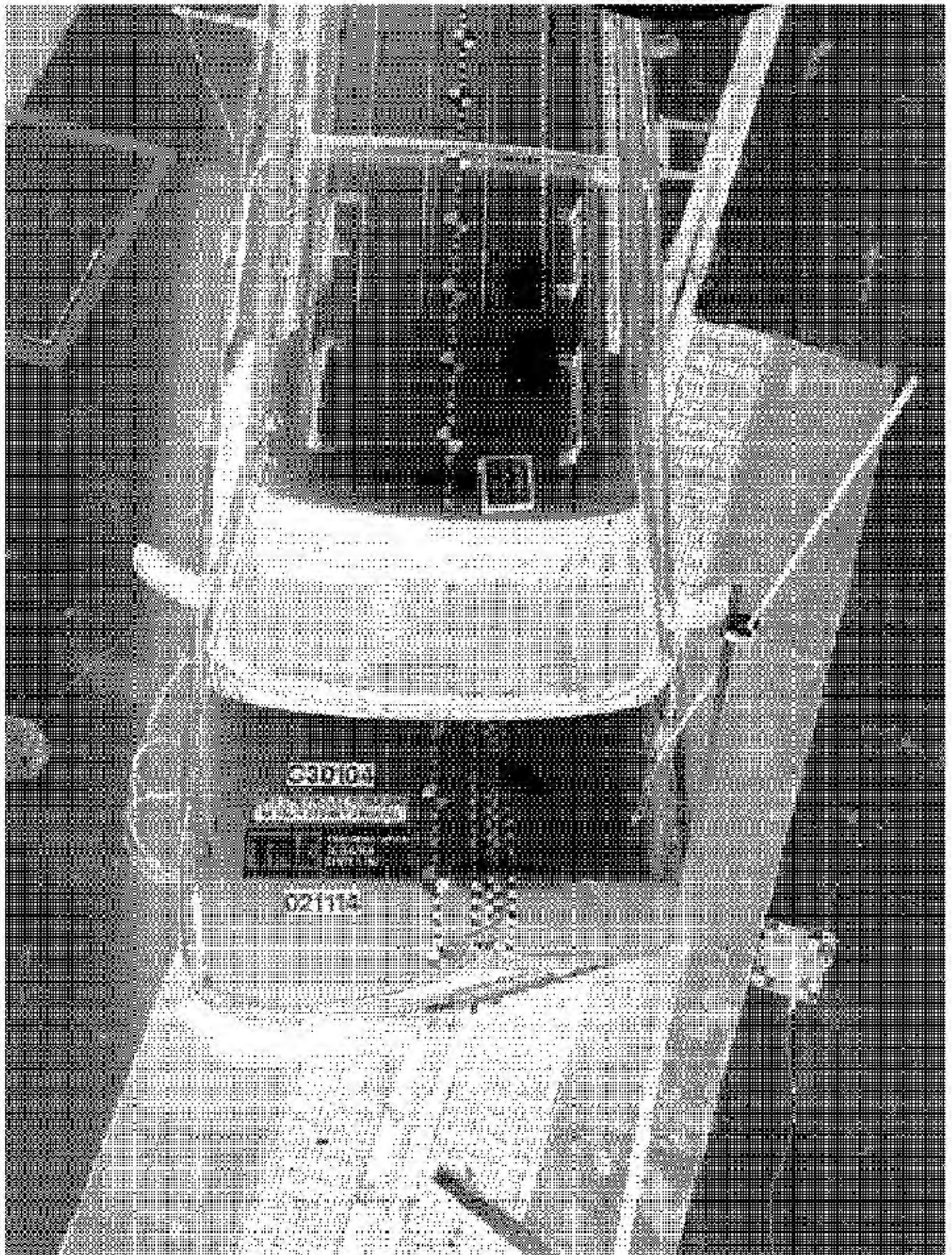


Image 12 Post-Test Overhead View

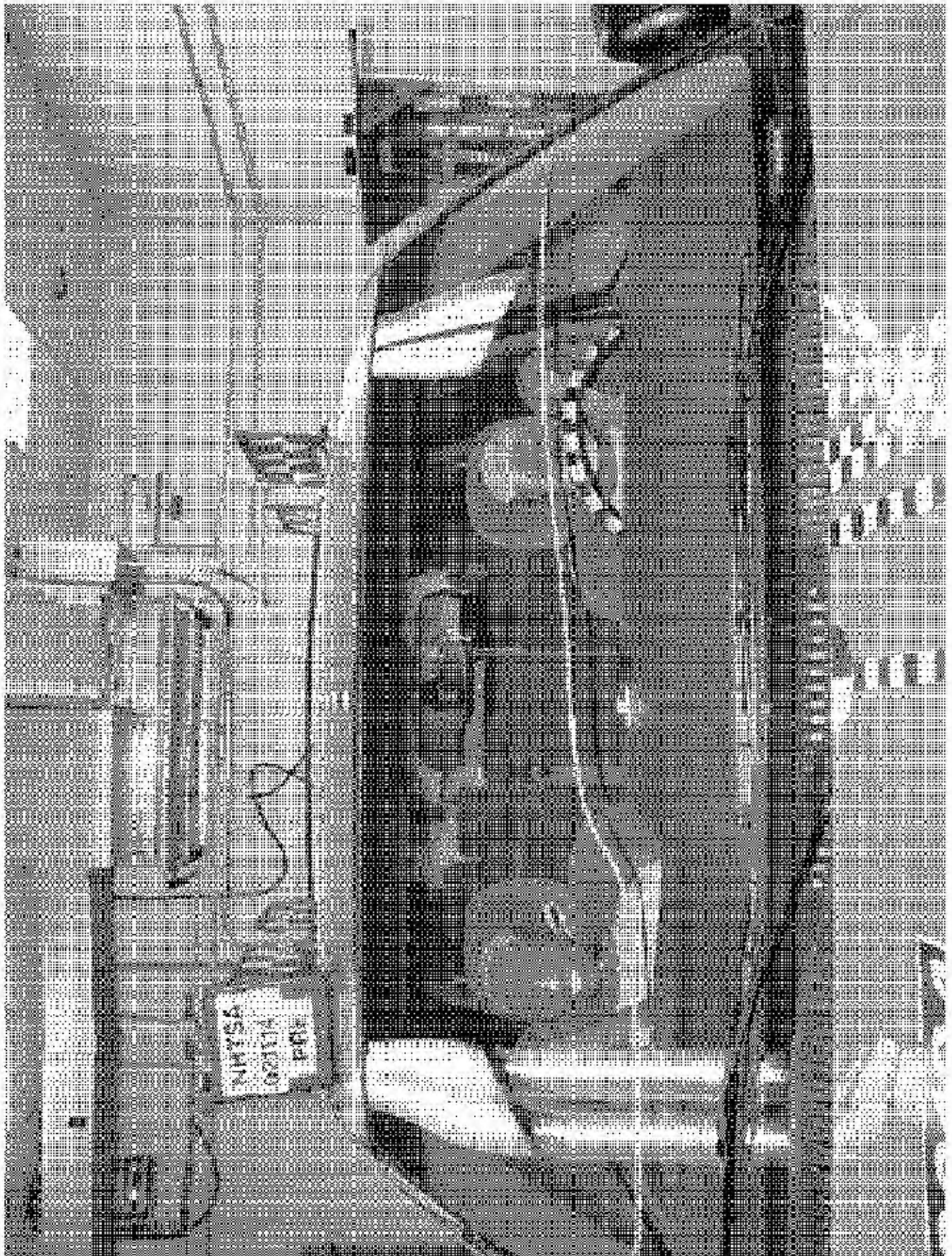


Image 13 Pre-Test Windshield View

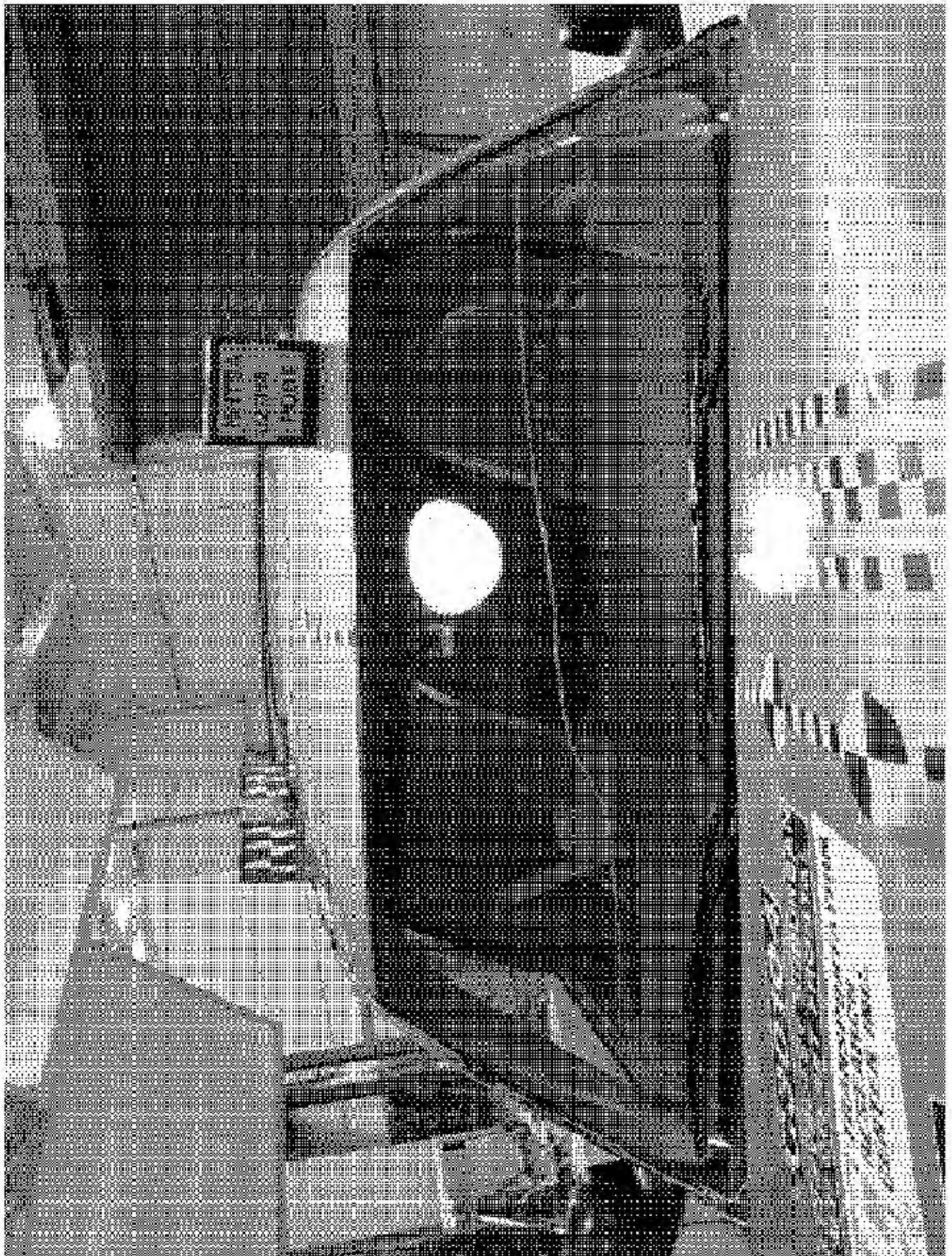


Image 14 Post-Test Windshield View

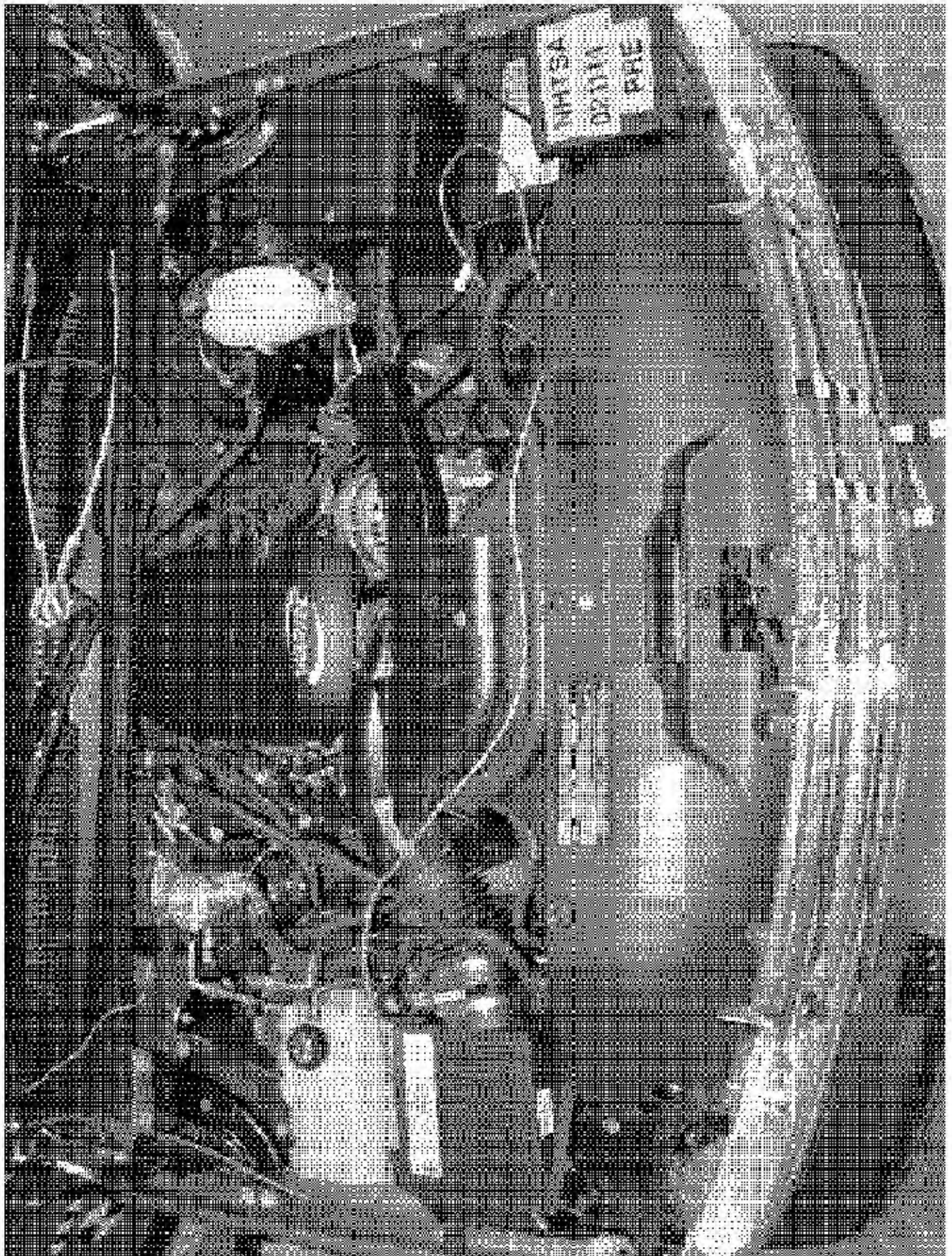


Image 15 Pre-Test Engine Compartment View



Image 16 Post-Test Engine Compartment View



Image 17 Pre-Test Steering Column and Firewall - Under Hood View

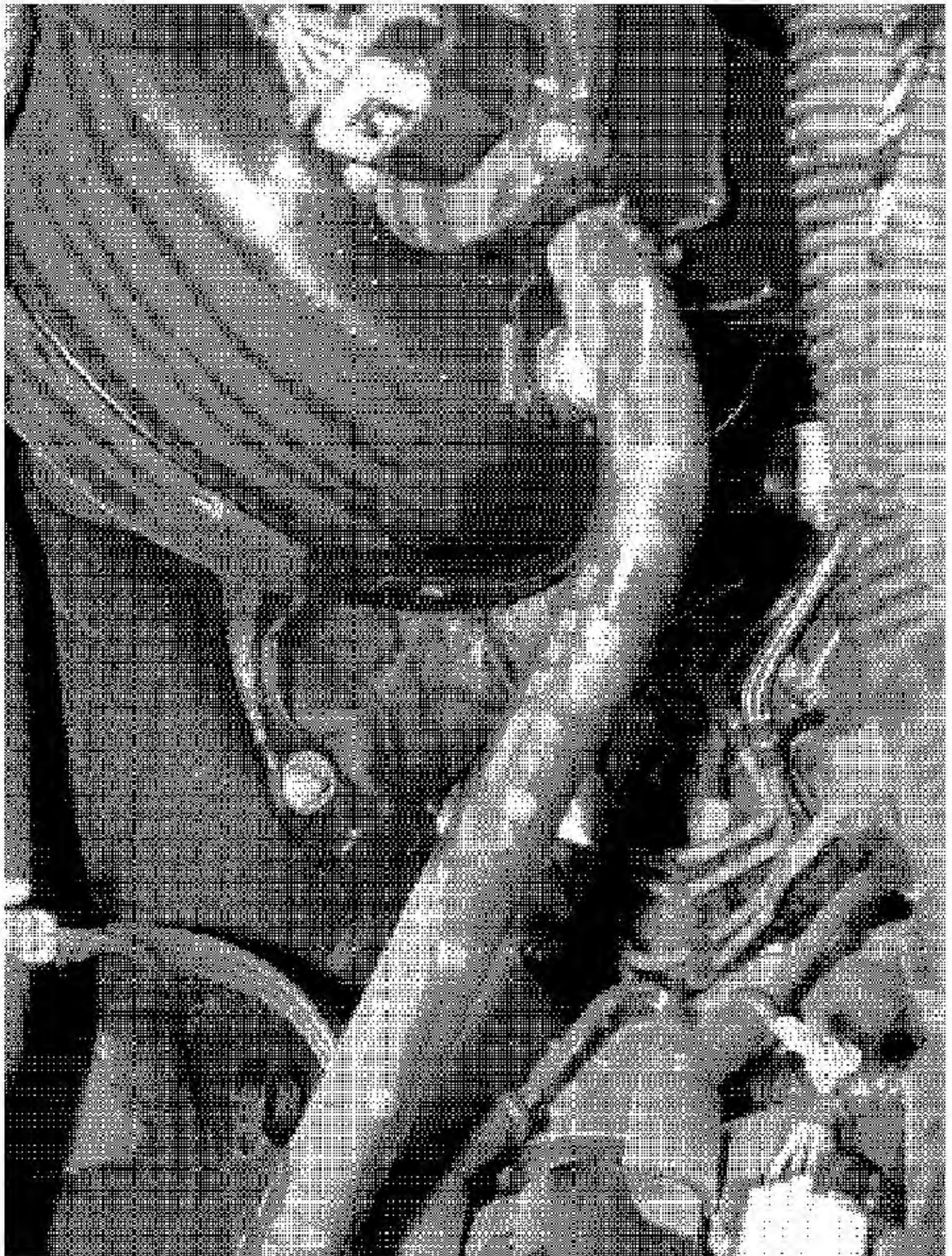


Image 18 Post-Test Steering Column and Firewall - Under Hood View

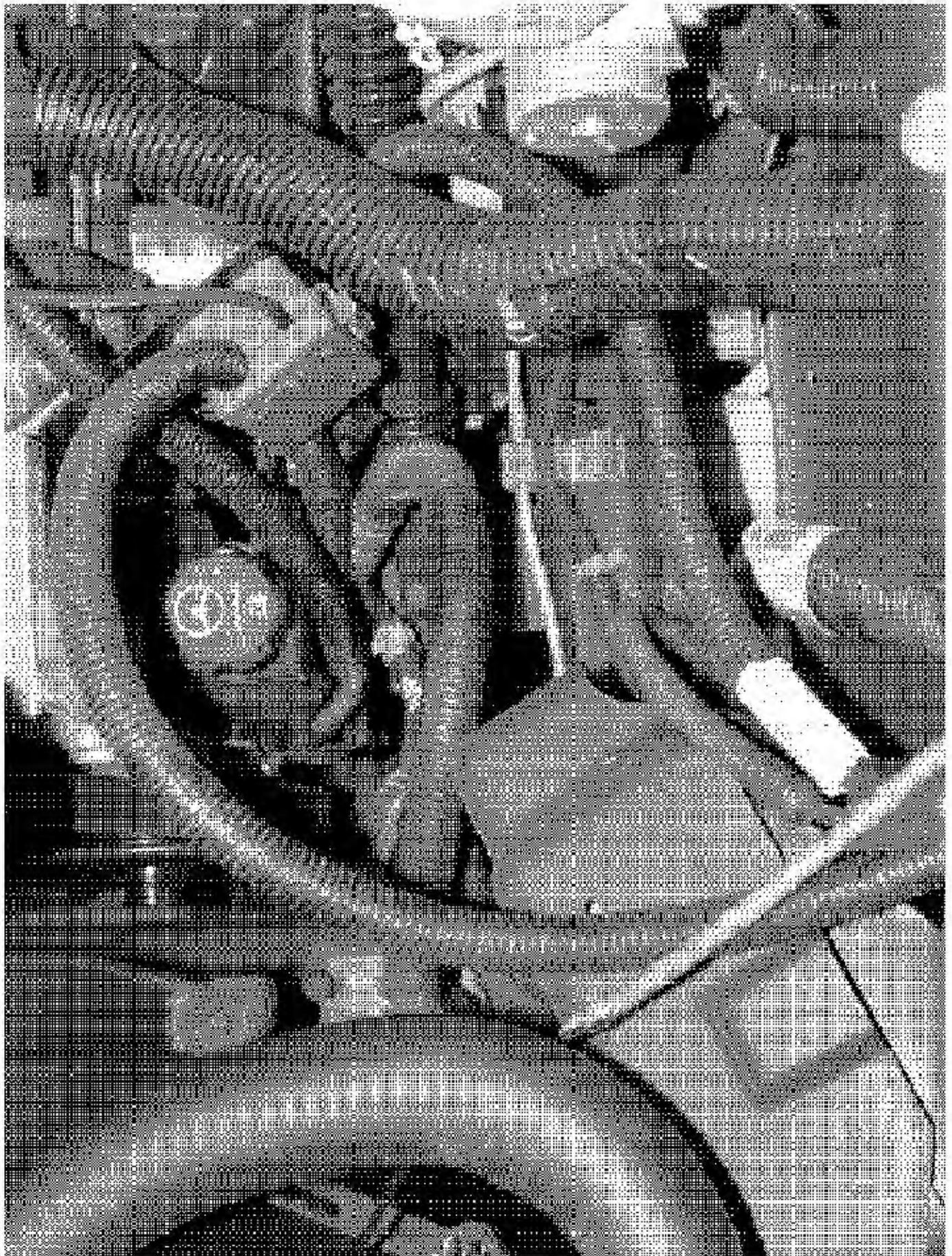


Image 19 Pre-Test Steering Box View

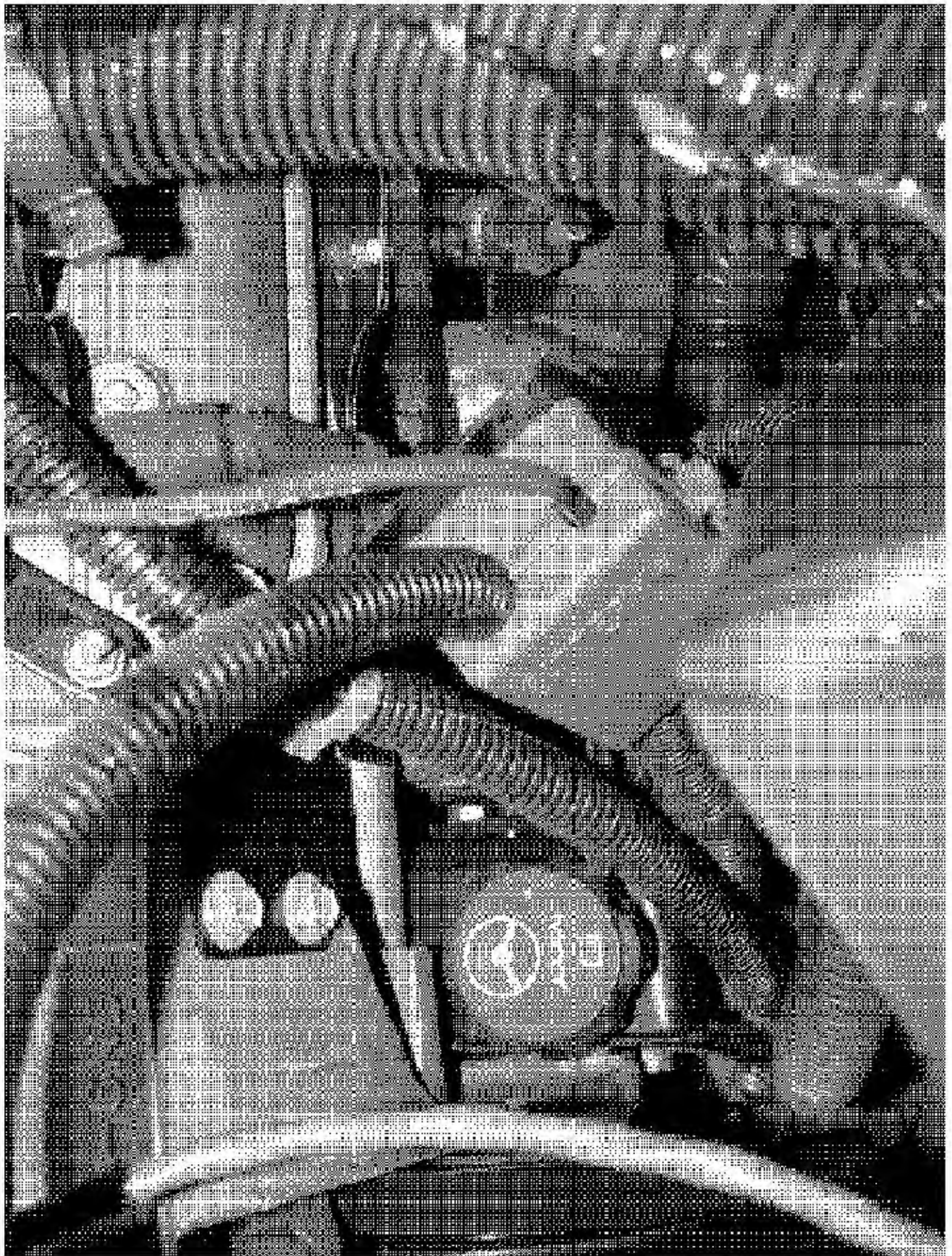


Image 20 Post-Test Steering Box View

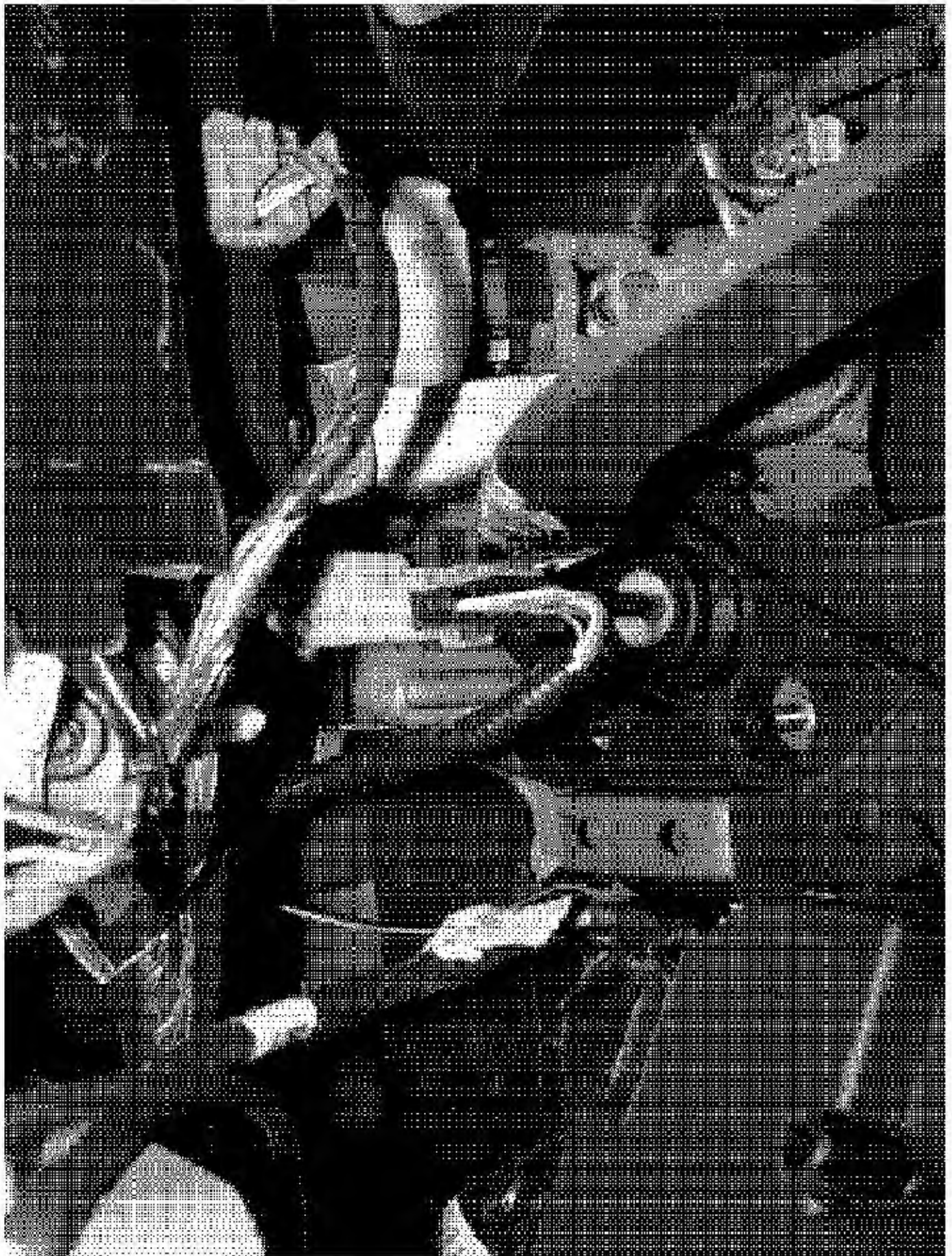


Image 31 Pre-Test Steering Column and Firewall - Interior View



Image 22 Post-Test Steering Column and Firewall - Interior View

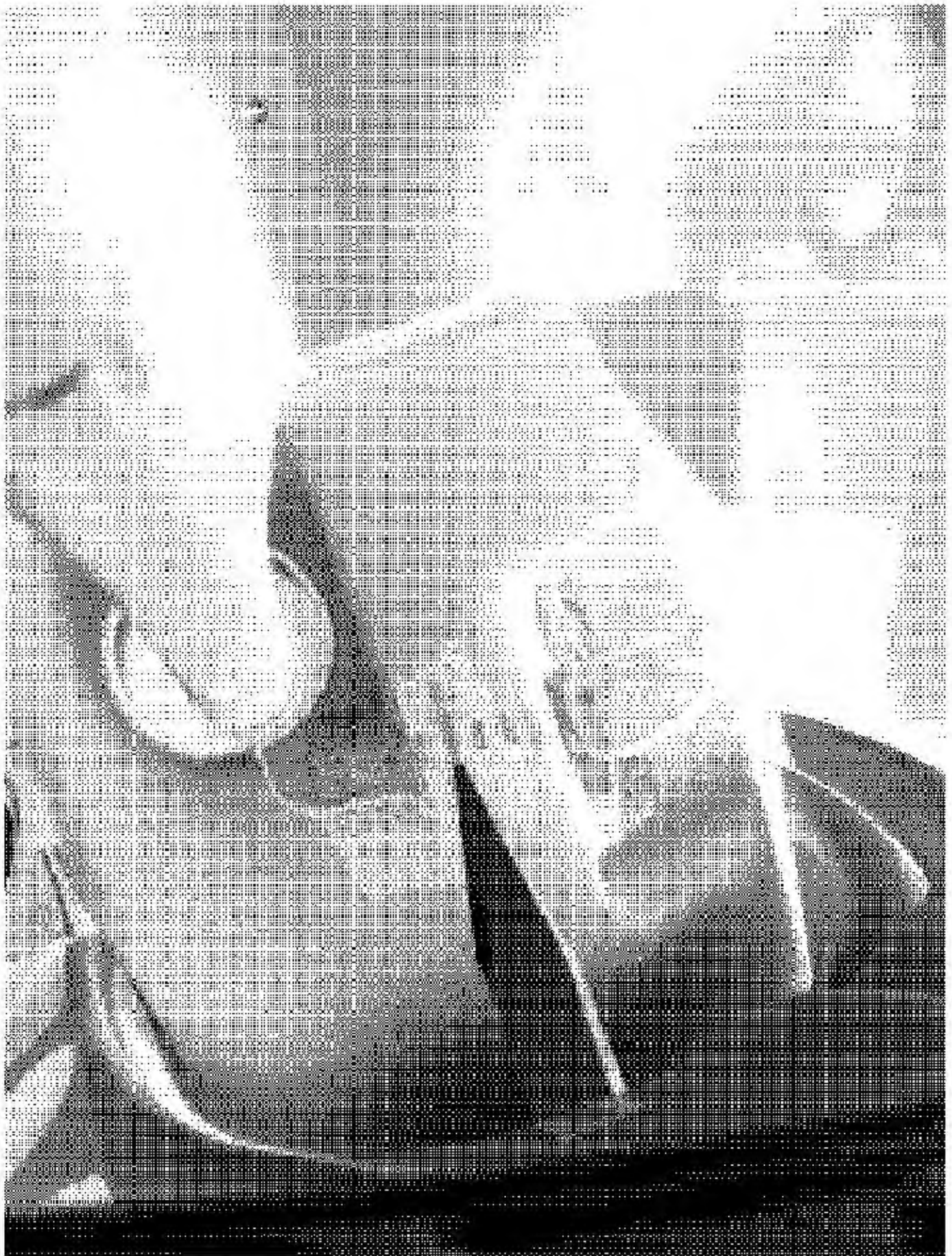


Image 23 Pre-Test Steering Column Position View

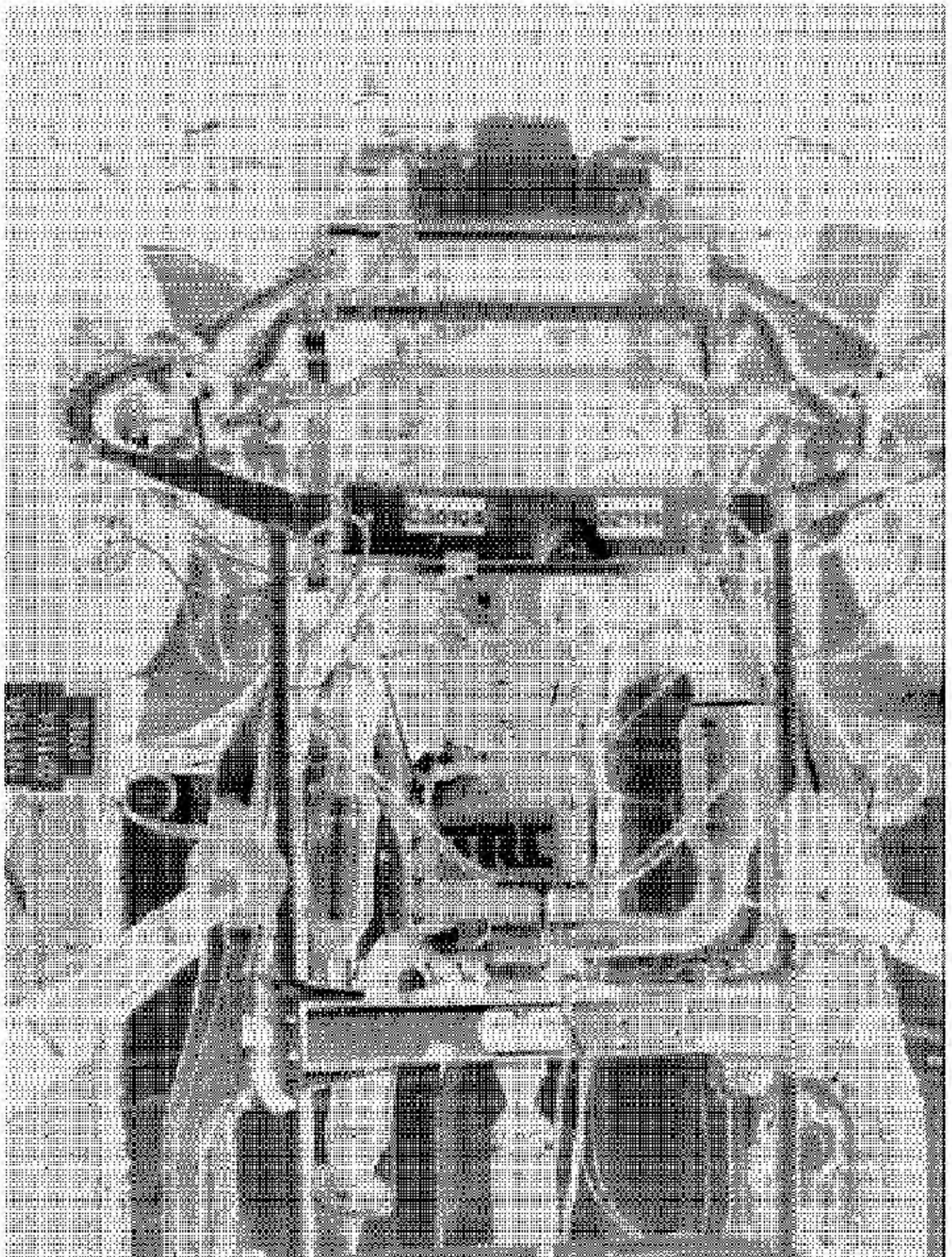


Image 24 Pre-Test Front Underbody View

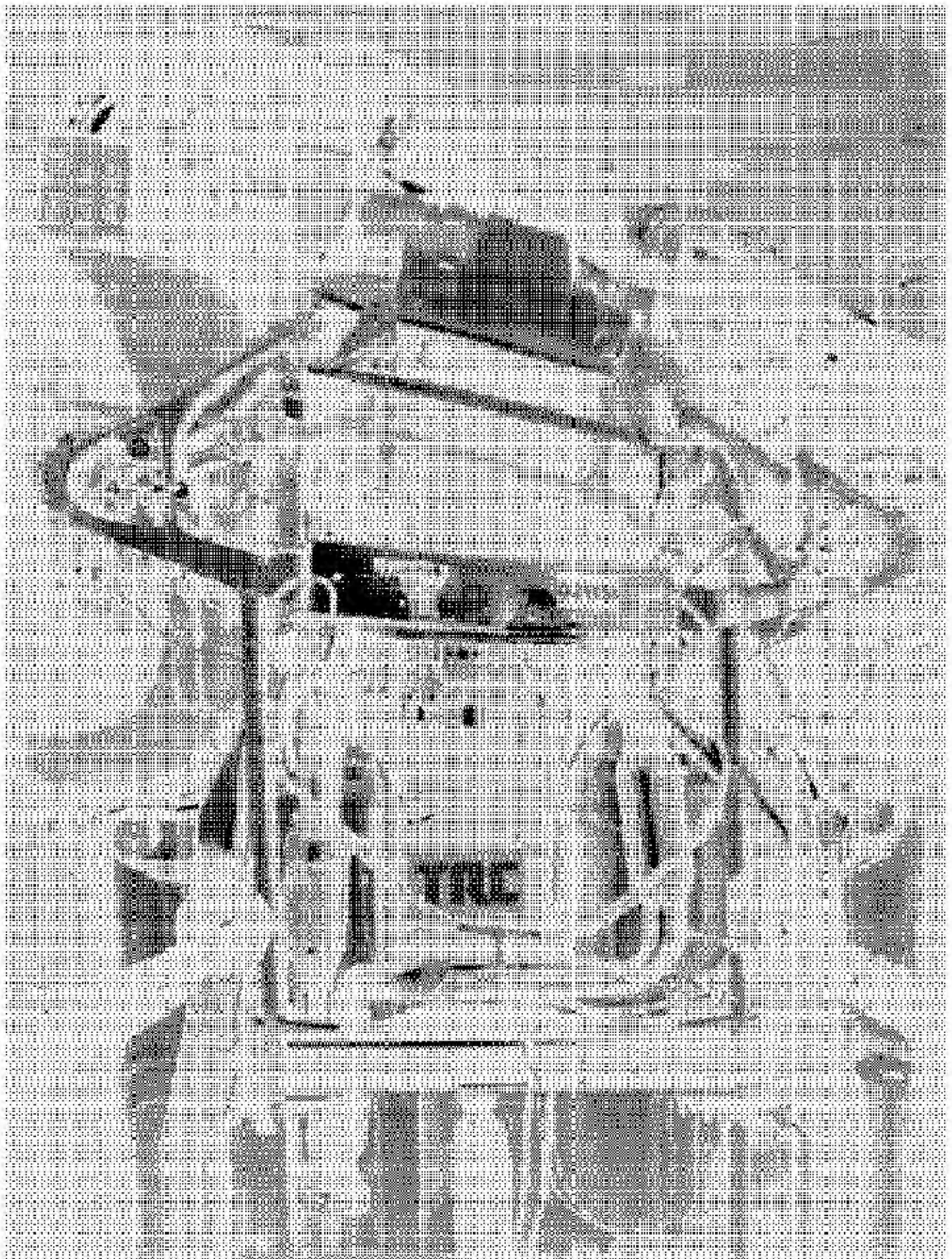


Image 25 Post-Test Front Underbody View

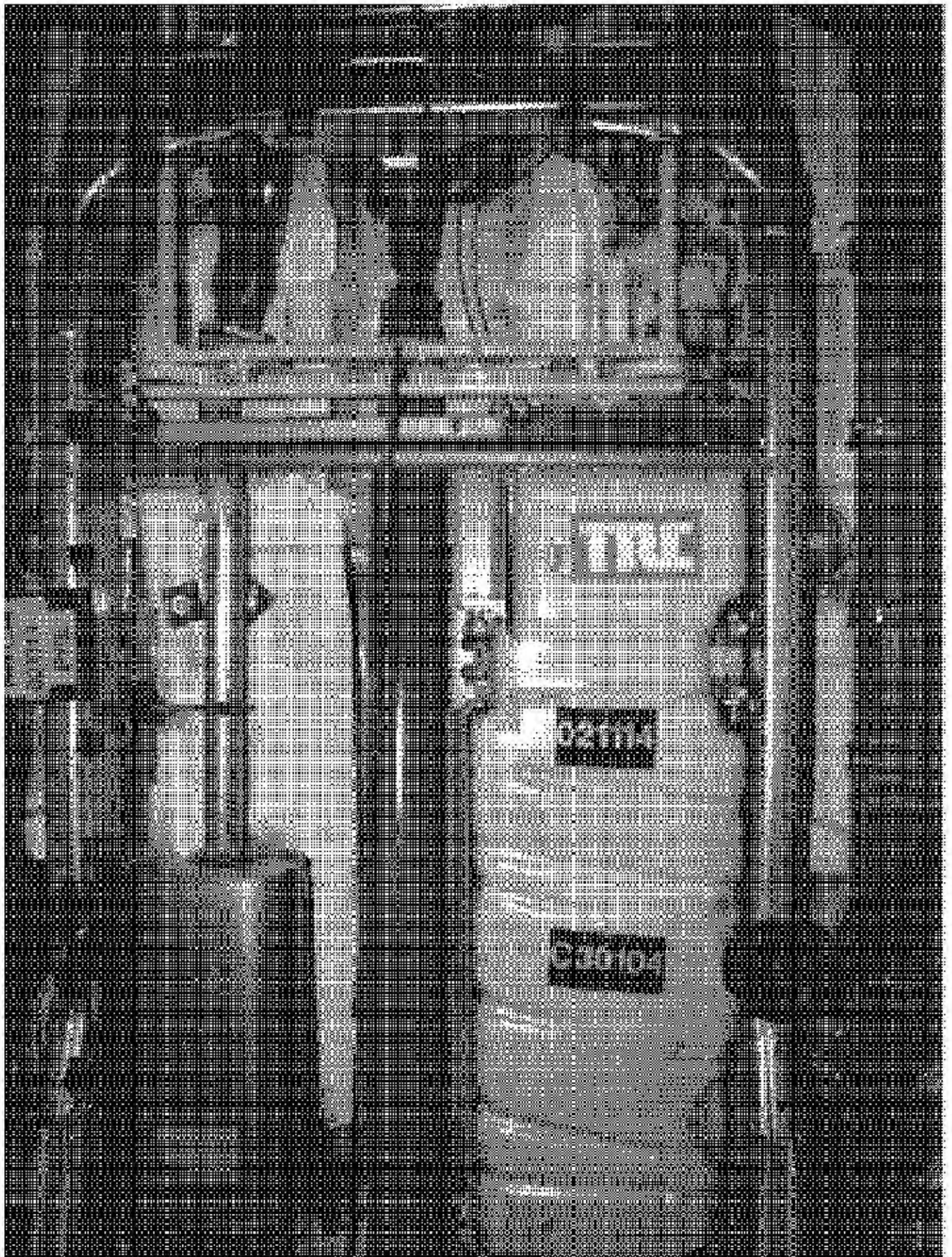


Image 26 Pre-Test Mid Underbody View

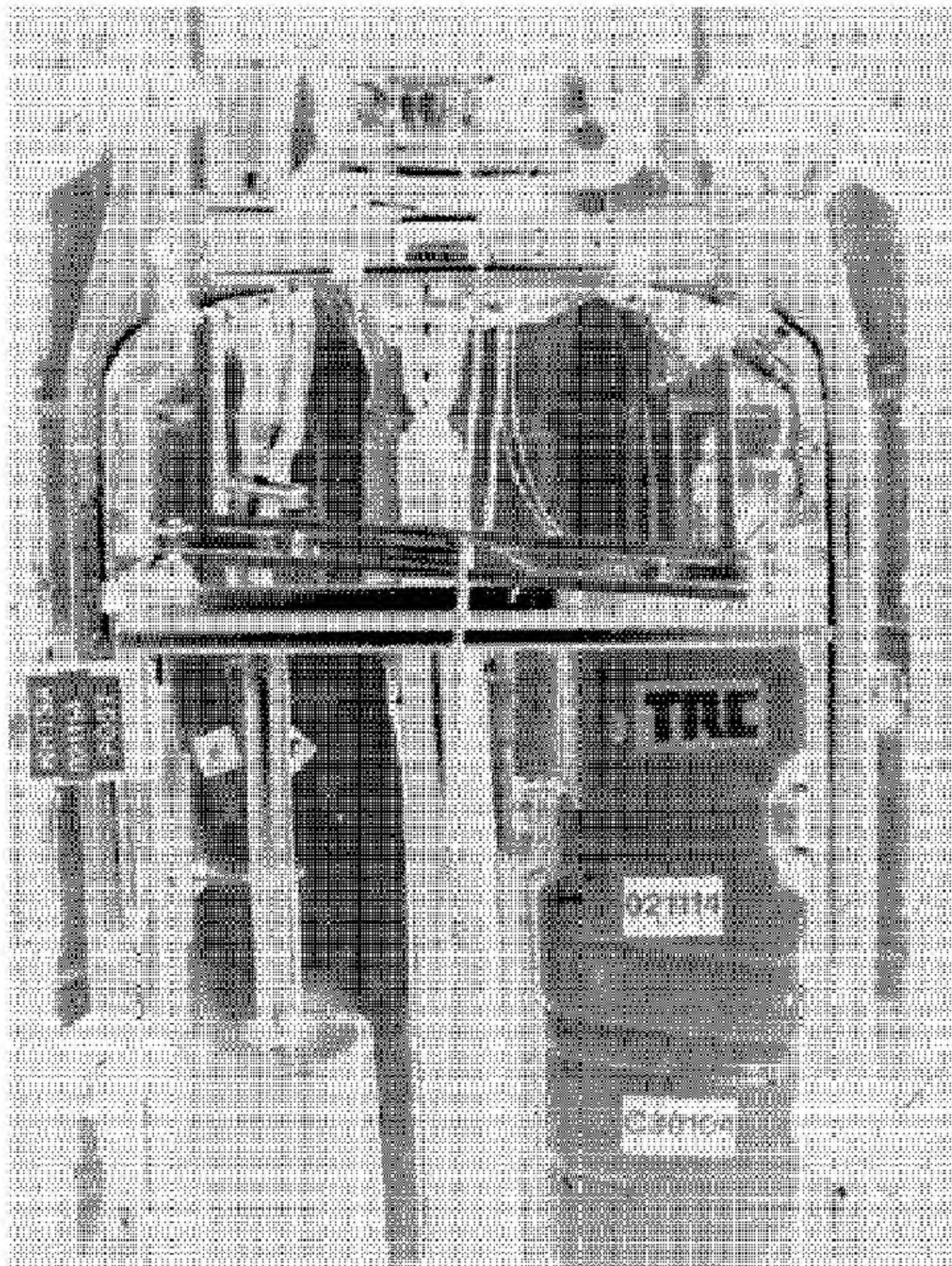


Image 27 Post-Test Mid Underbody View

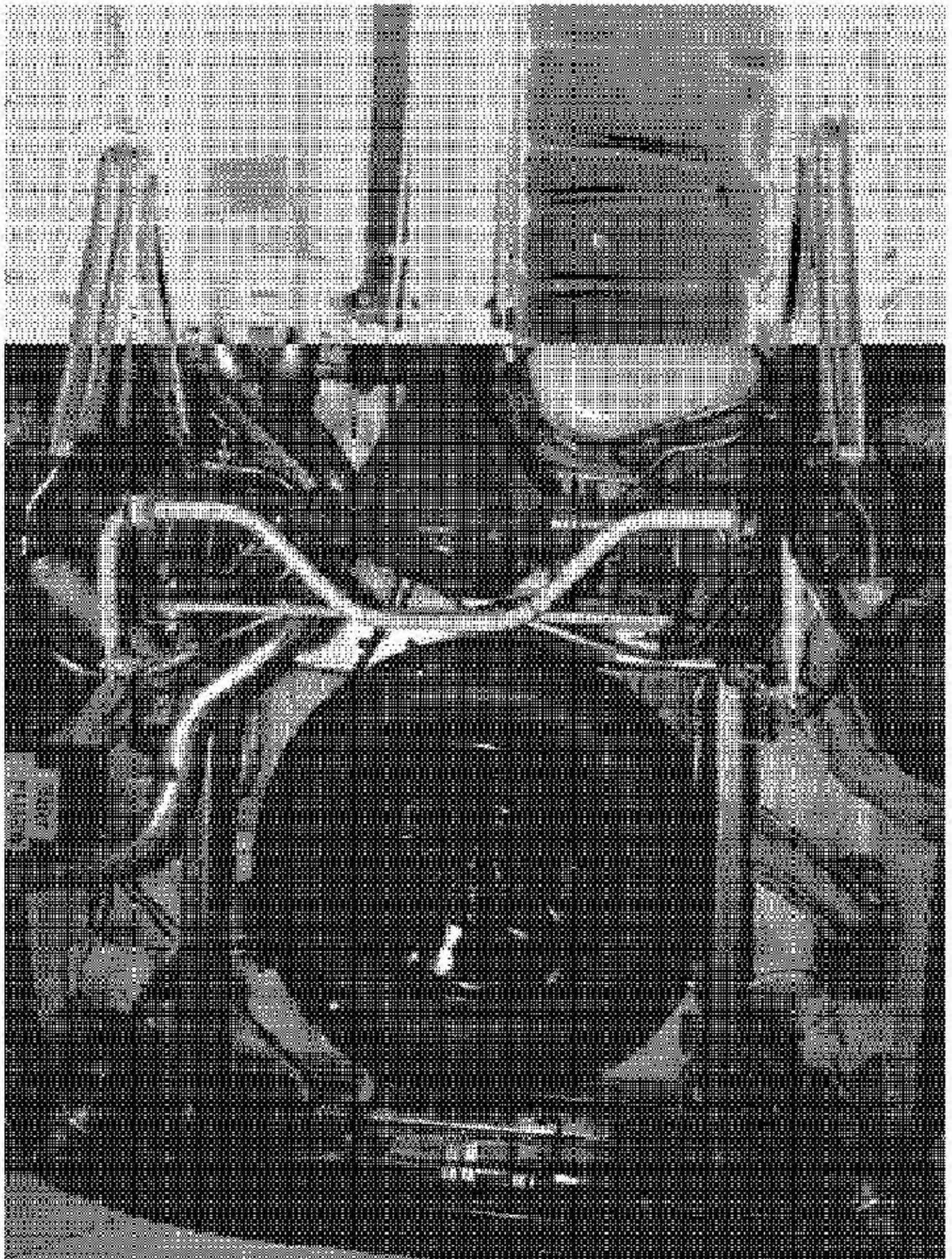


Image 28 Pre-Test Rear Underbody View

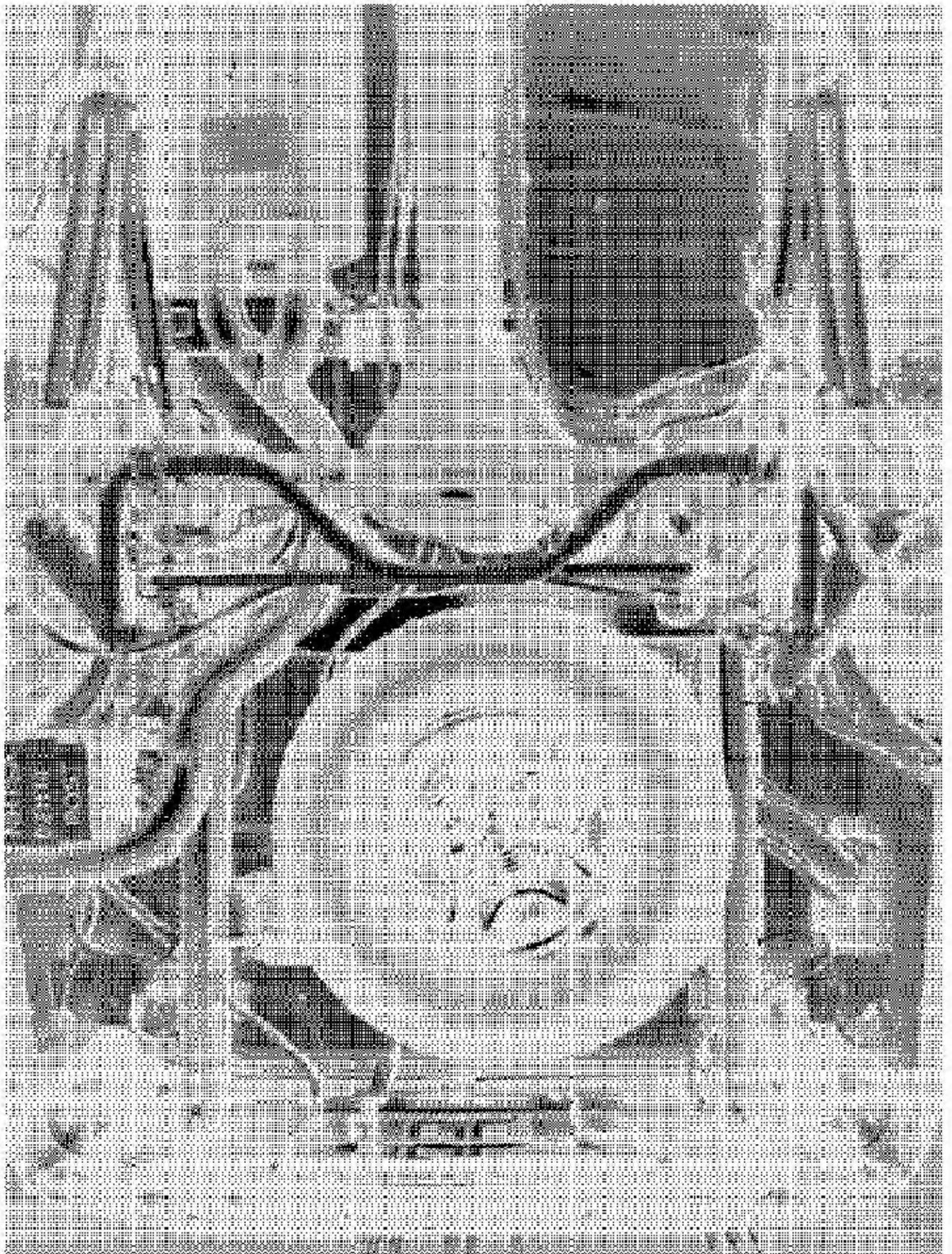


Image 29 Post-Test Rear Underbody View

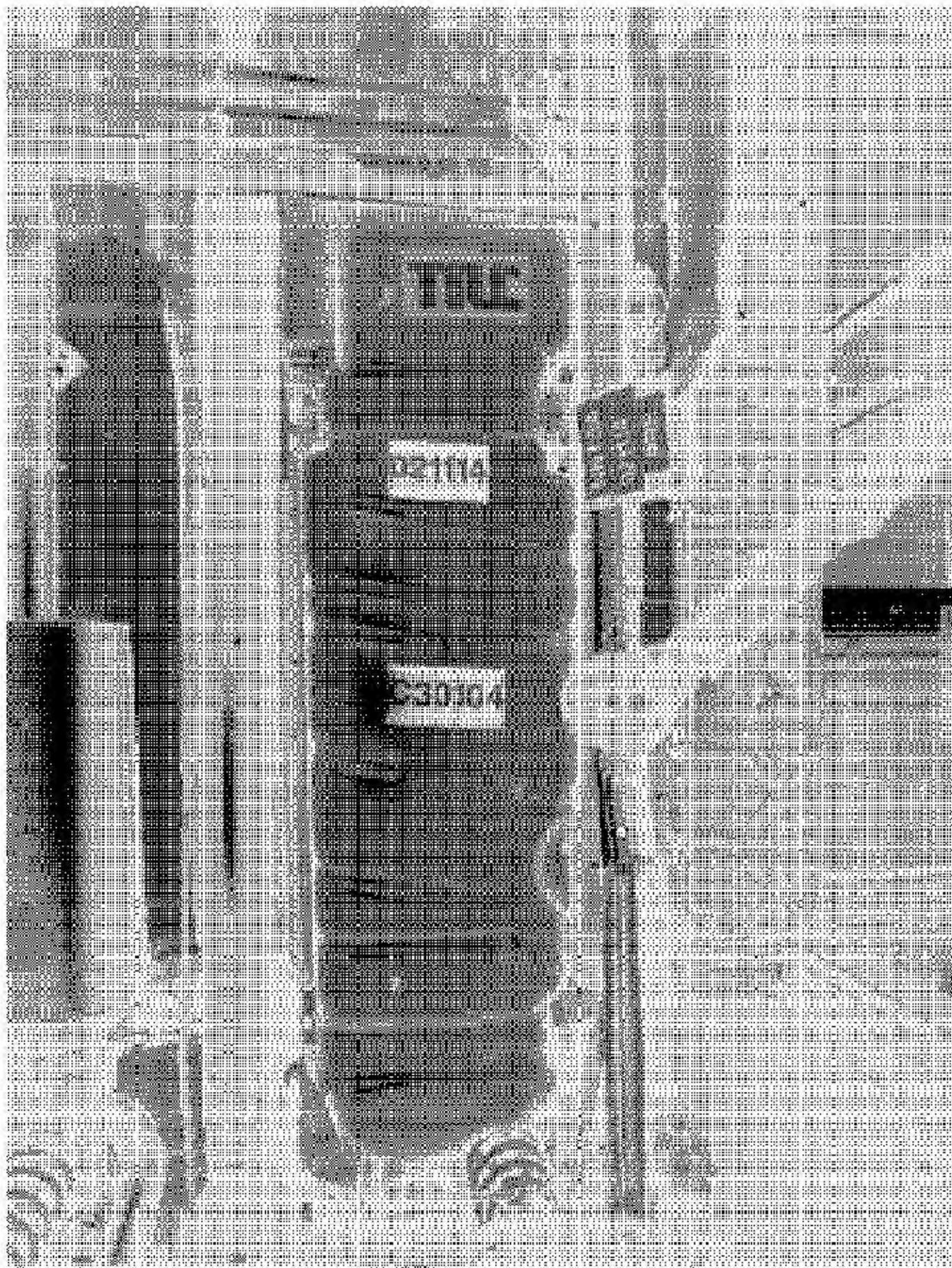


Image 30 Pre-Test Fuel Tank View

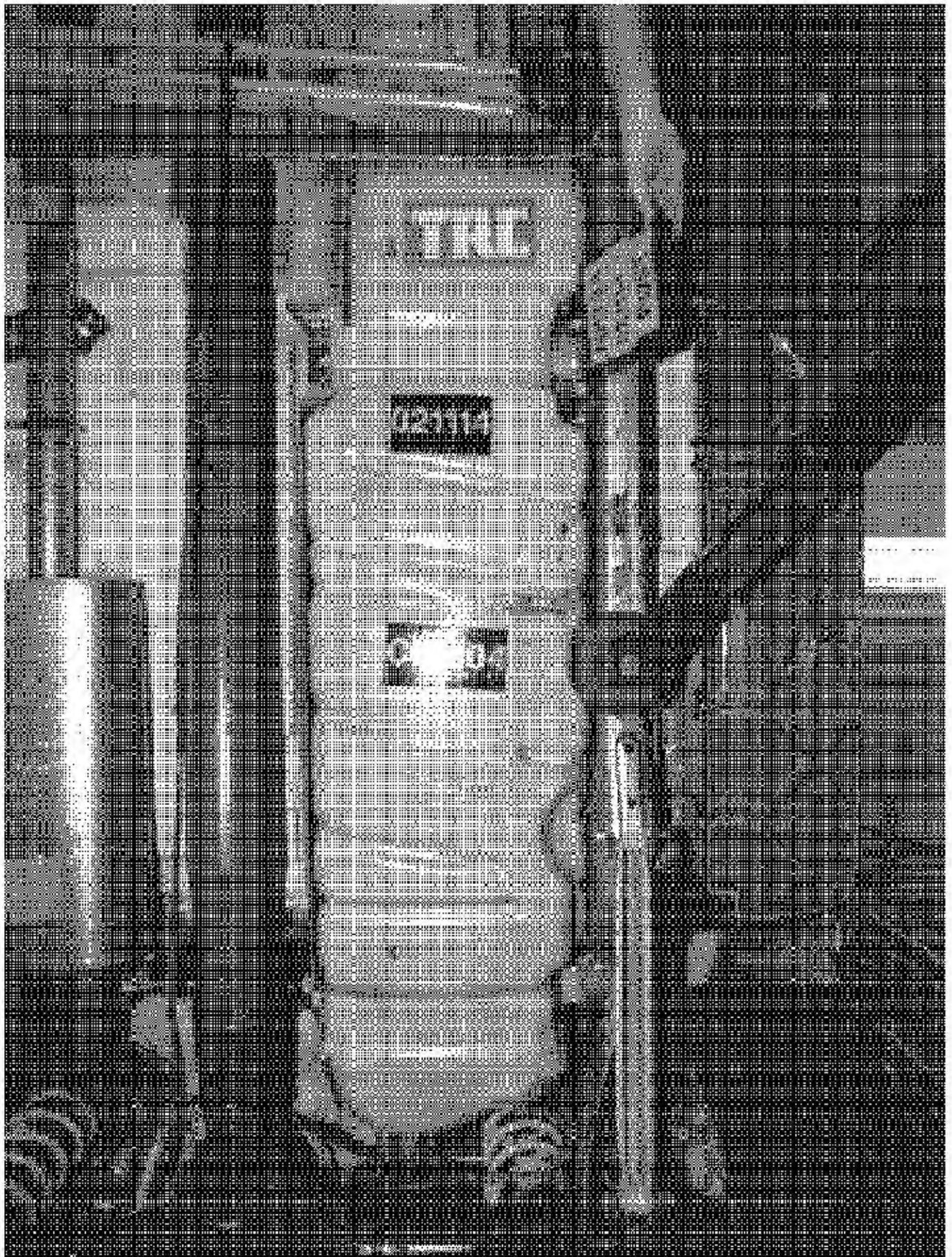


Image 31 Post-Test Fuel Tank View



Image 32 Pre-Test Fuel Lines View

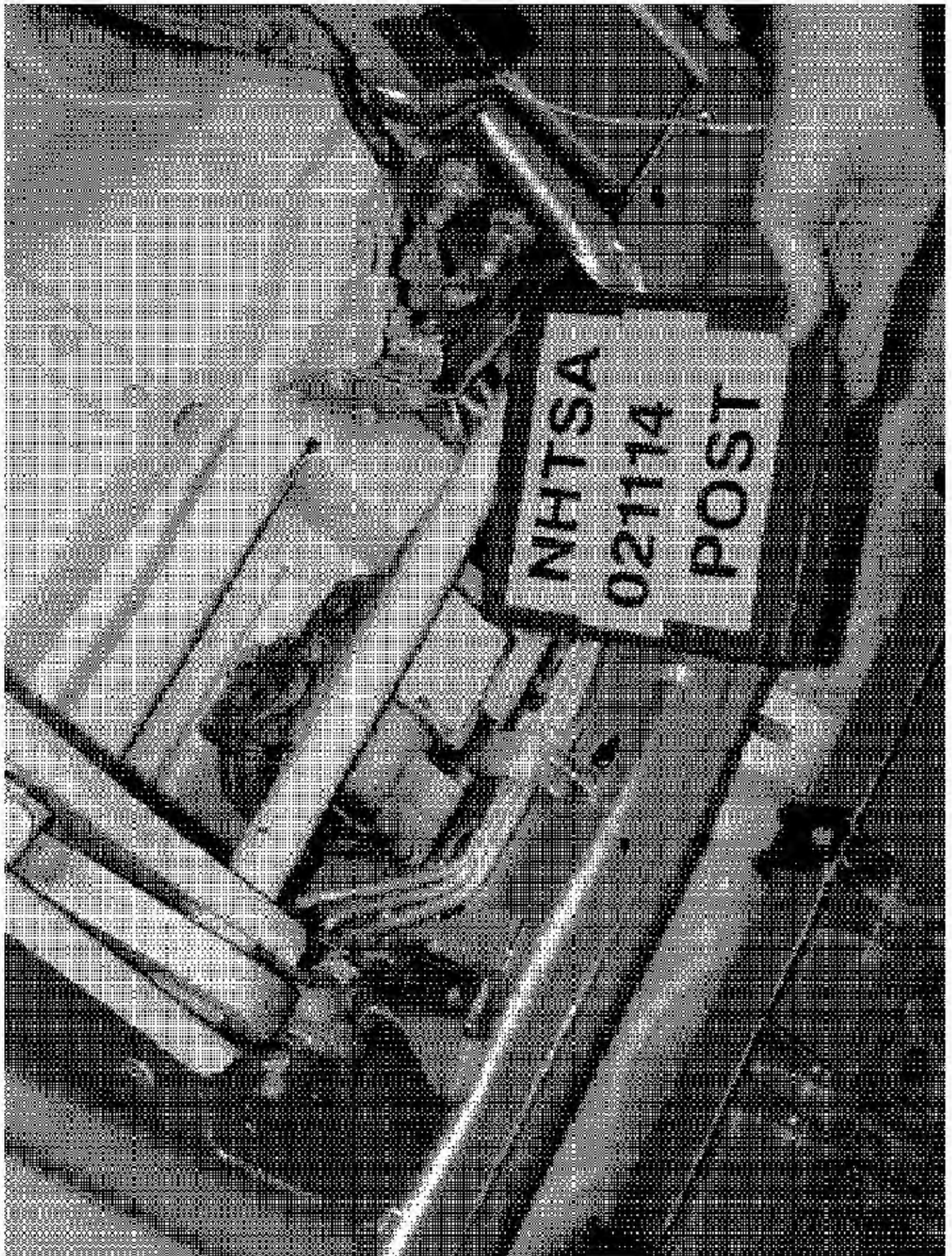


Image 33 Post-Test Fuel Lines View

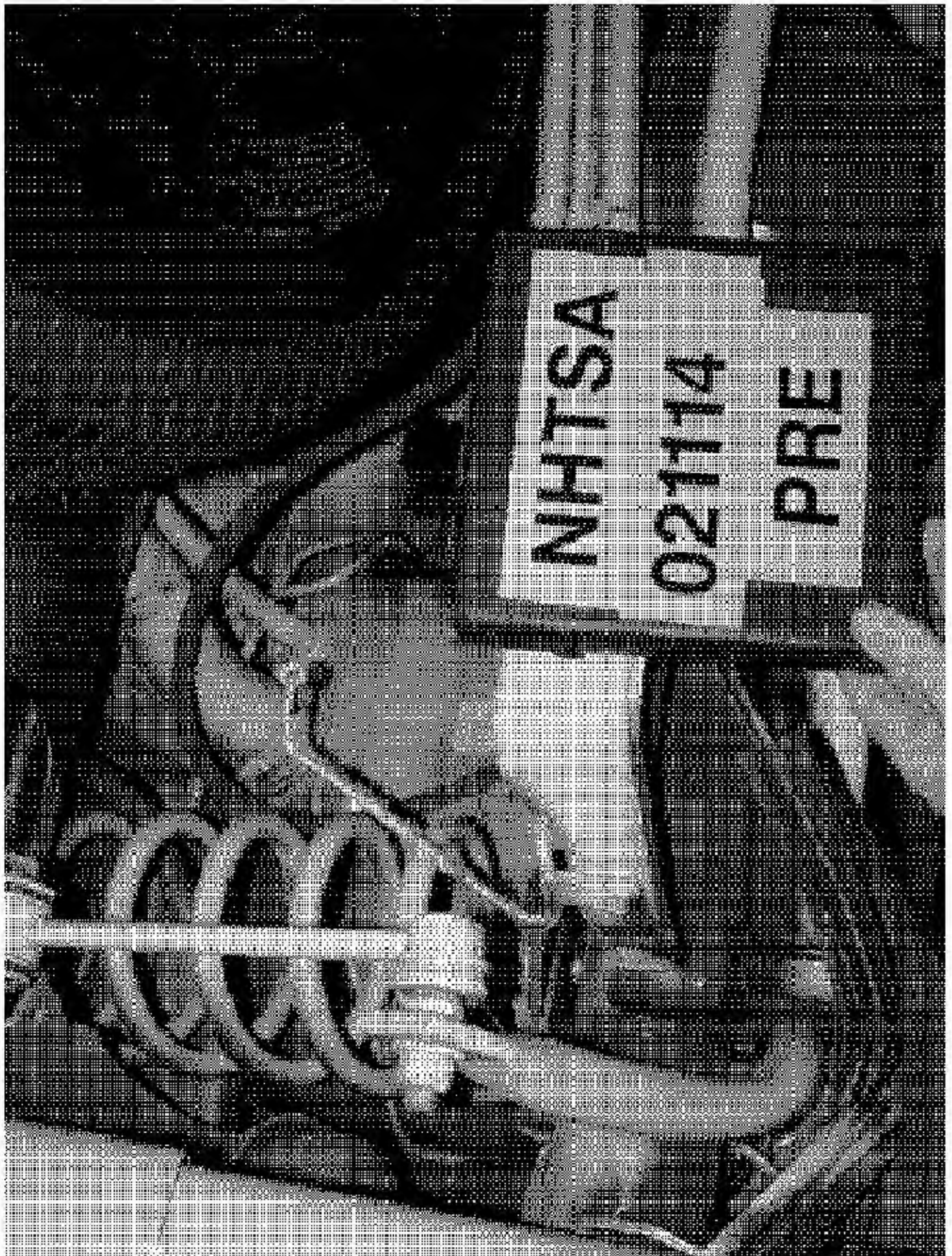


Image 34 Pre-Test Fuel Filler Neck - View 1

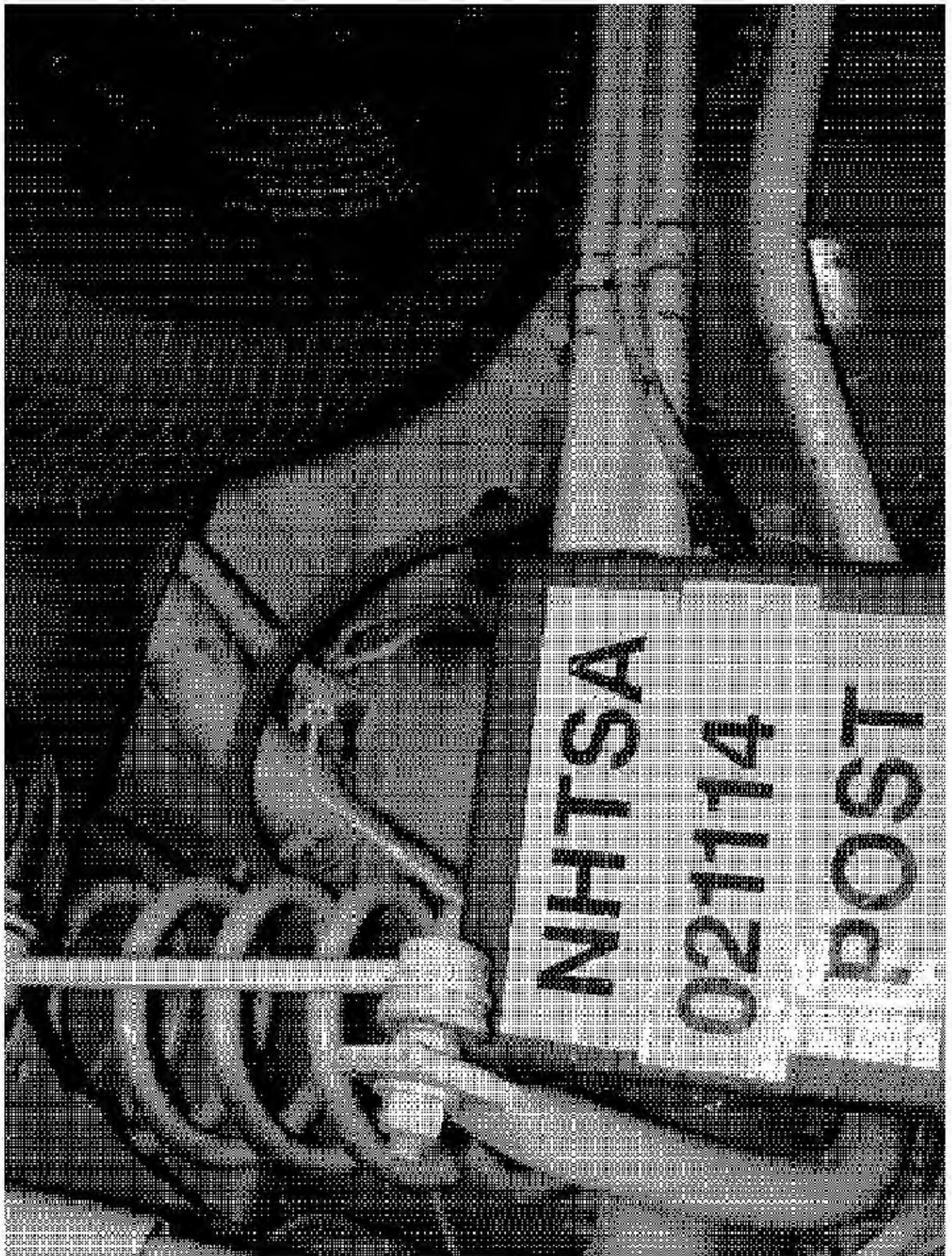


Image 35 Post-Test Fuel Filler Neck - View 1

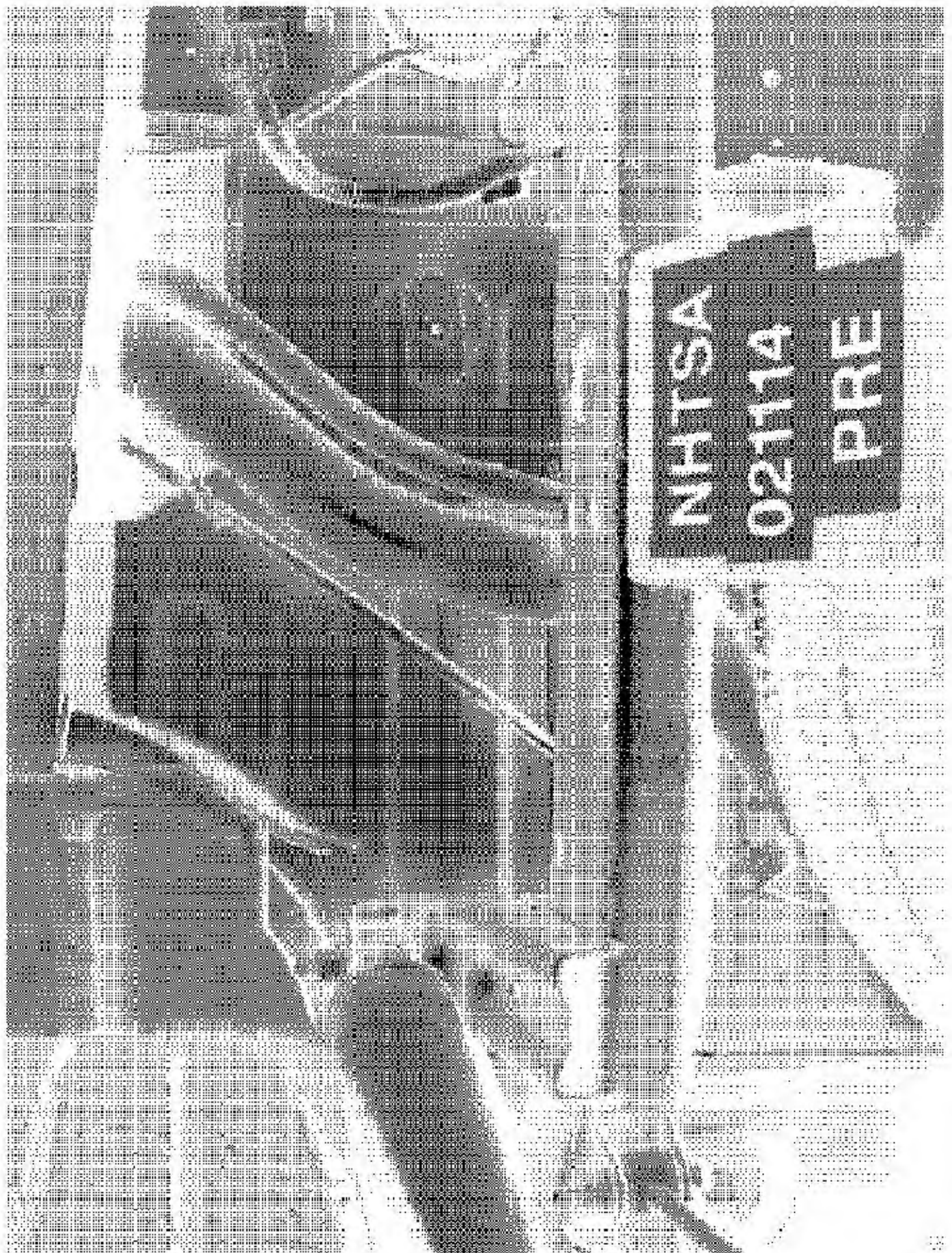


Image 36 Pre-Test Fuel Filler Neck - View 2

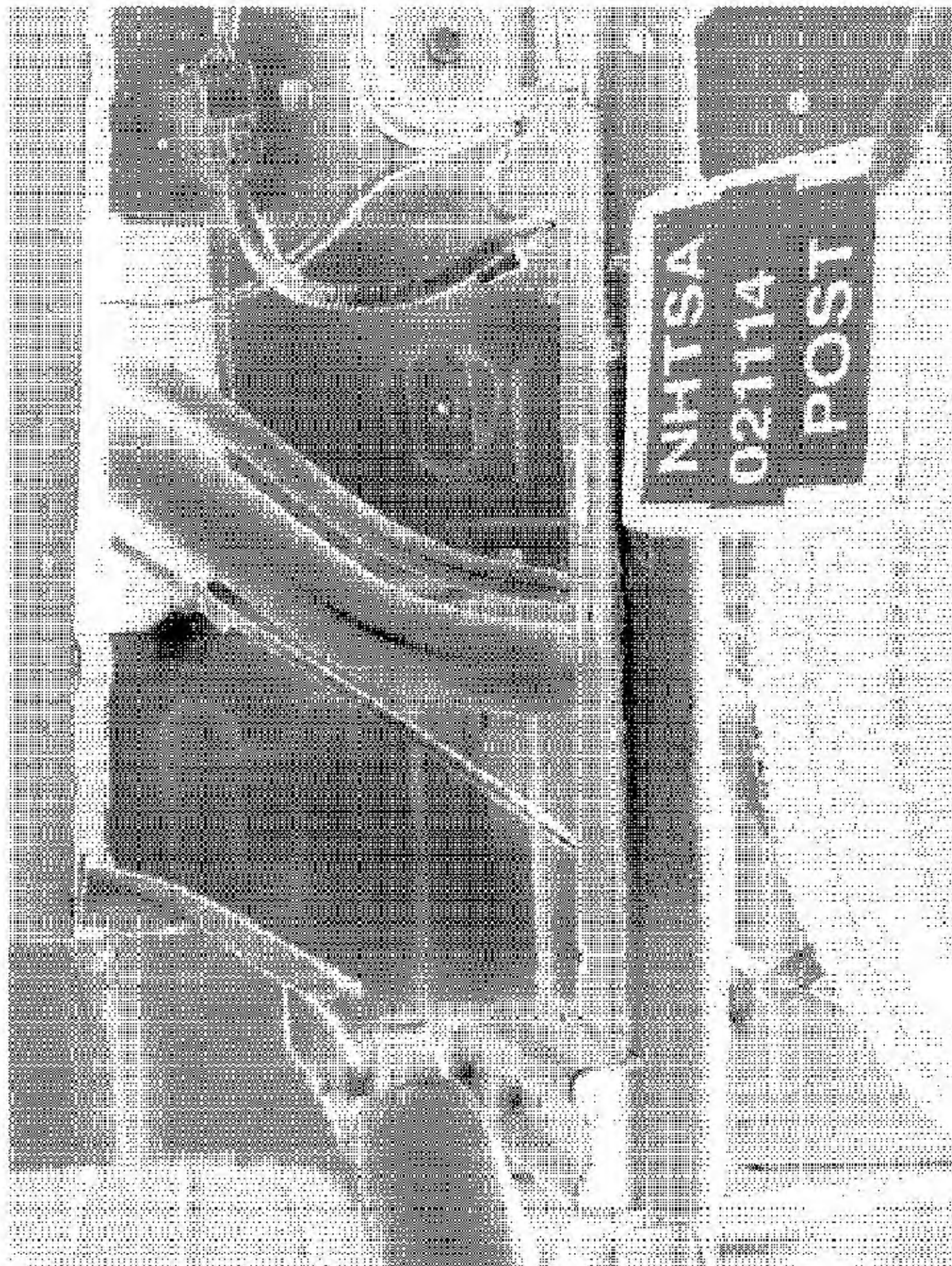


Image 37 Post-Test Fuel Filler Neck - View 2

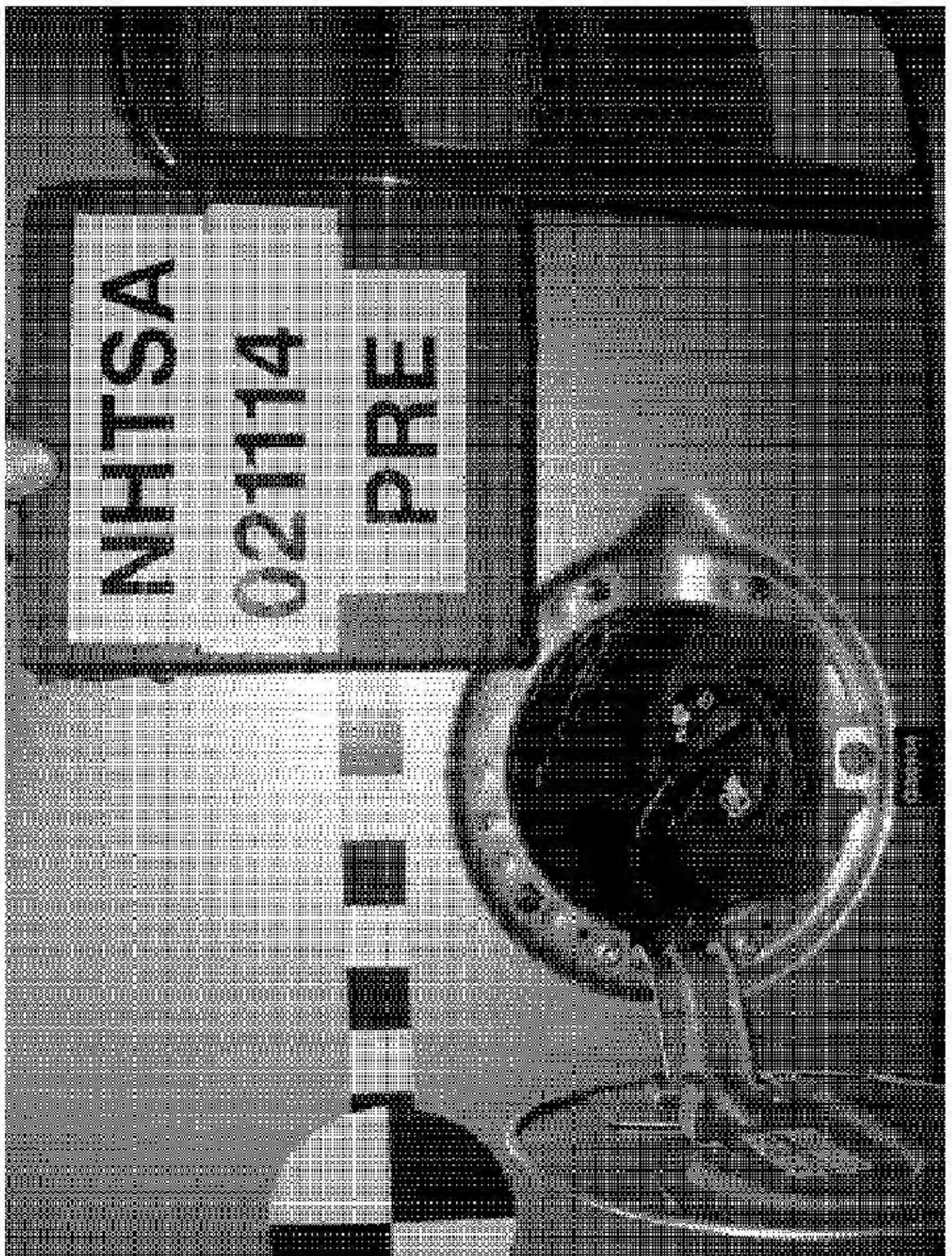


Image 38 Pre-Test Fuel Filler Cap View

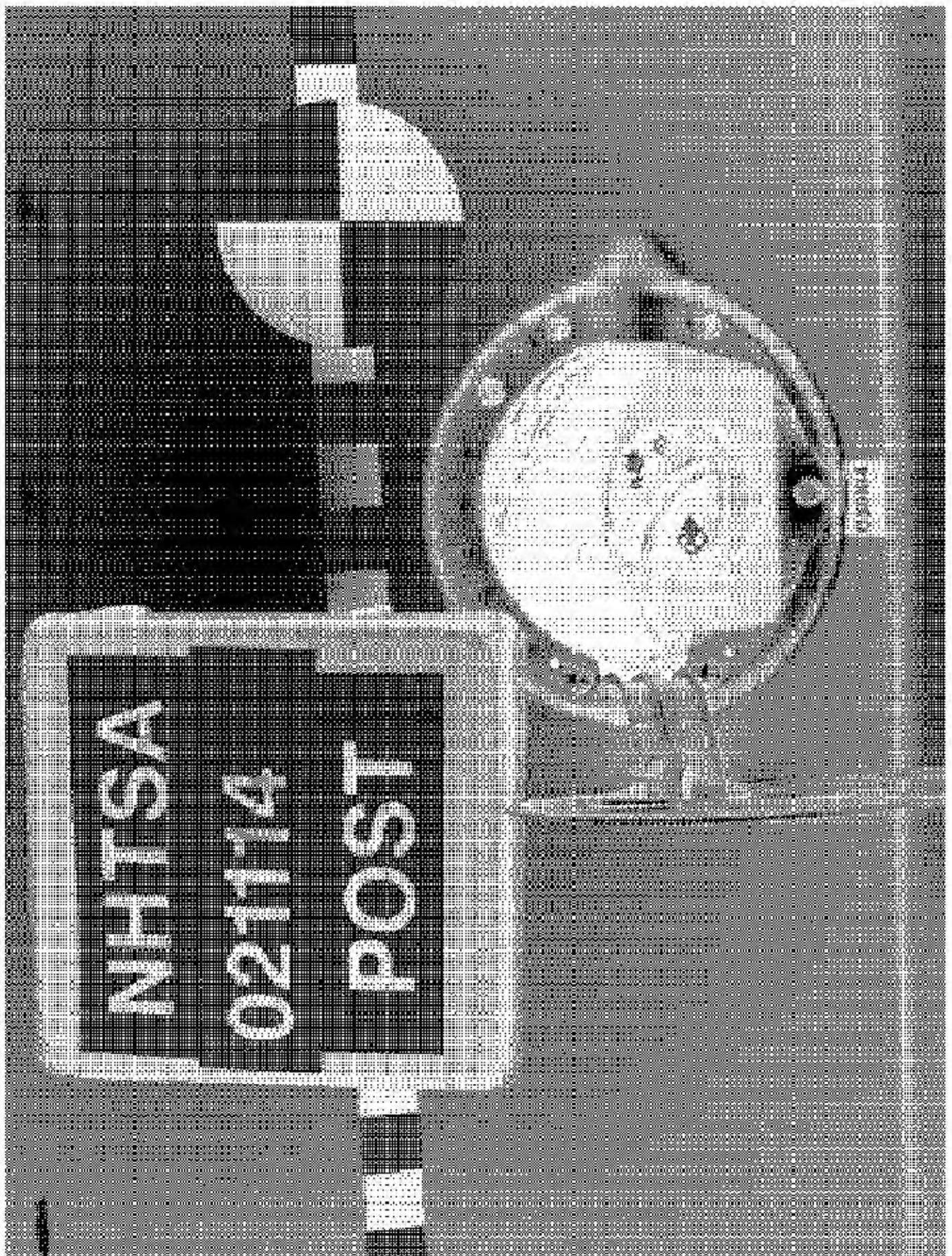


Image 39 Post-Test Fuel Filler Cap View

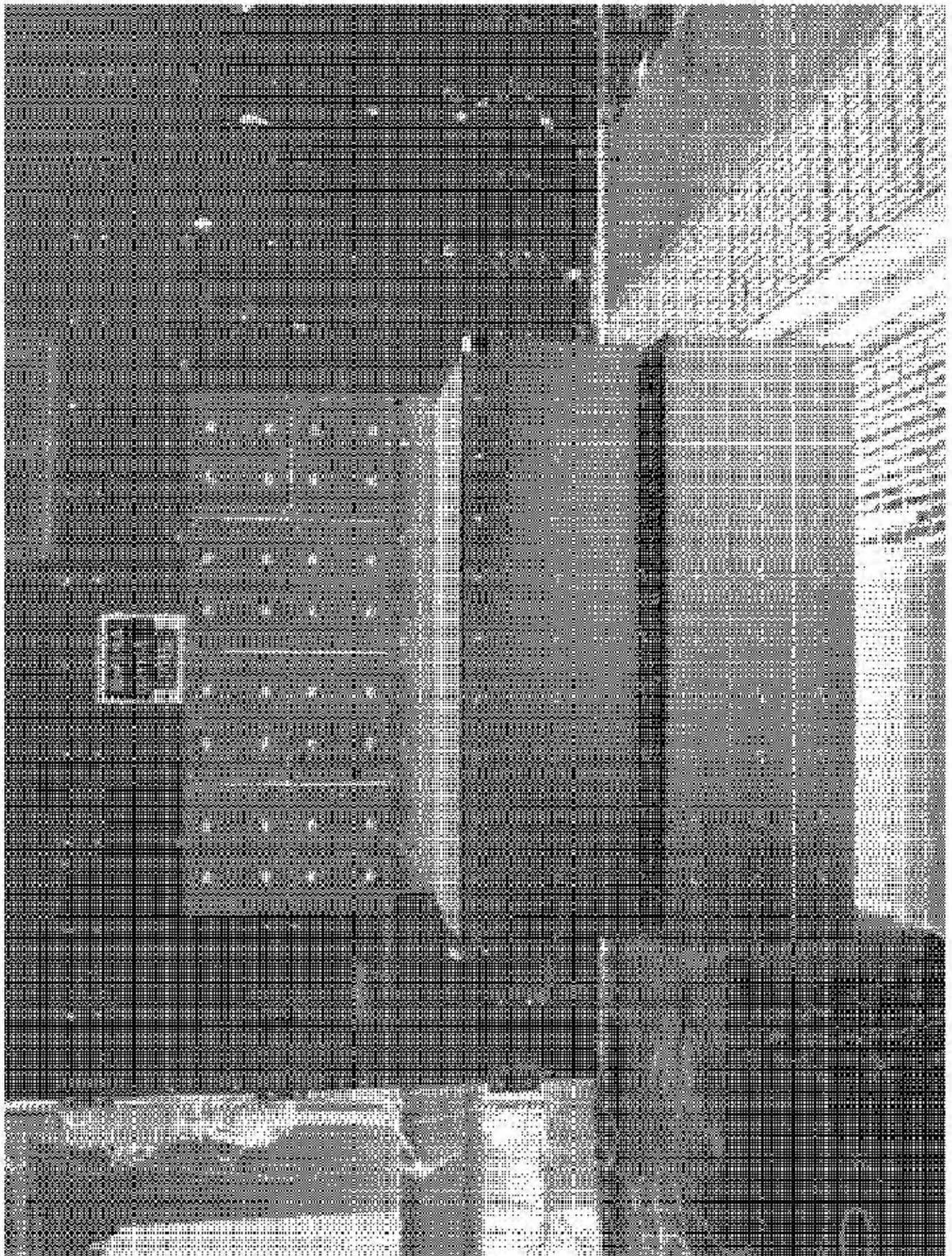


Image 40 Pre-Test Offset Barrier Face Front View

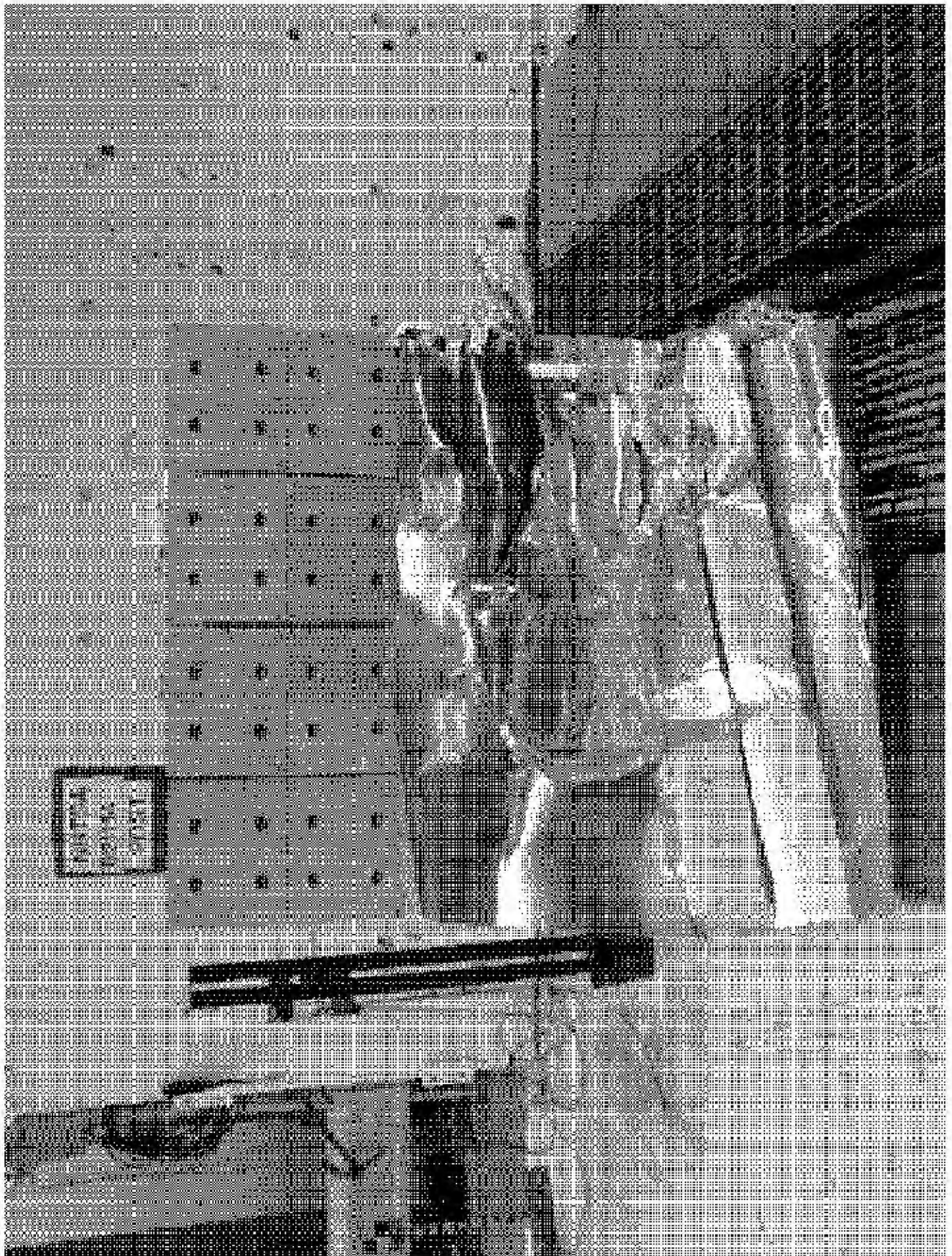


Image 41 Post-Test Offset Barrier Face Front View

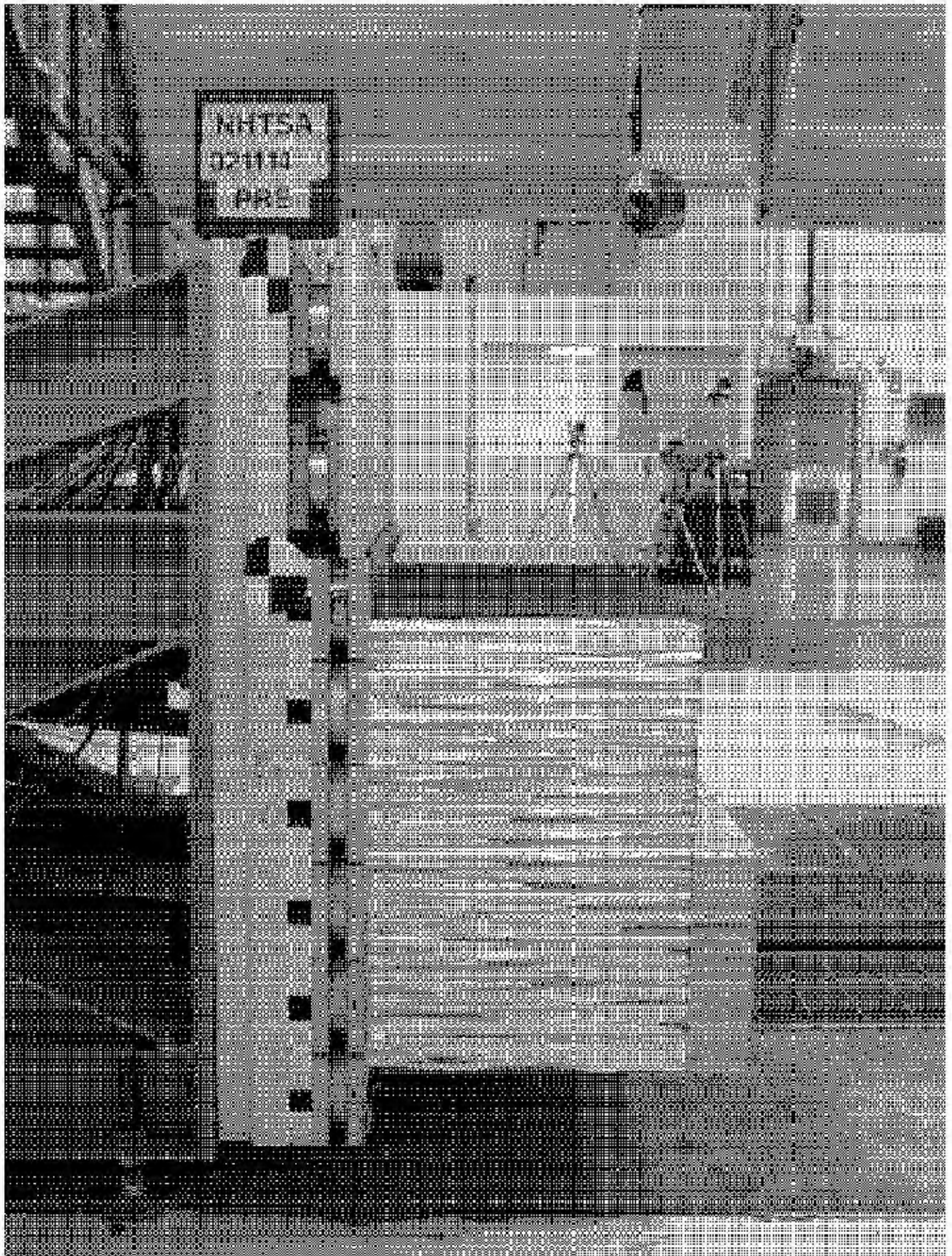


Image 42 Pre-Test Offset Barrier Face Left Side View

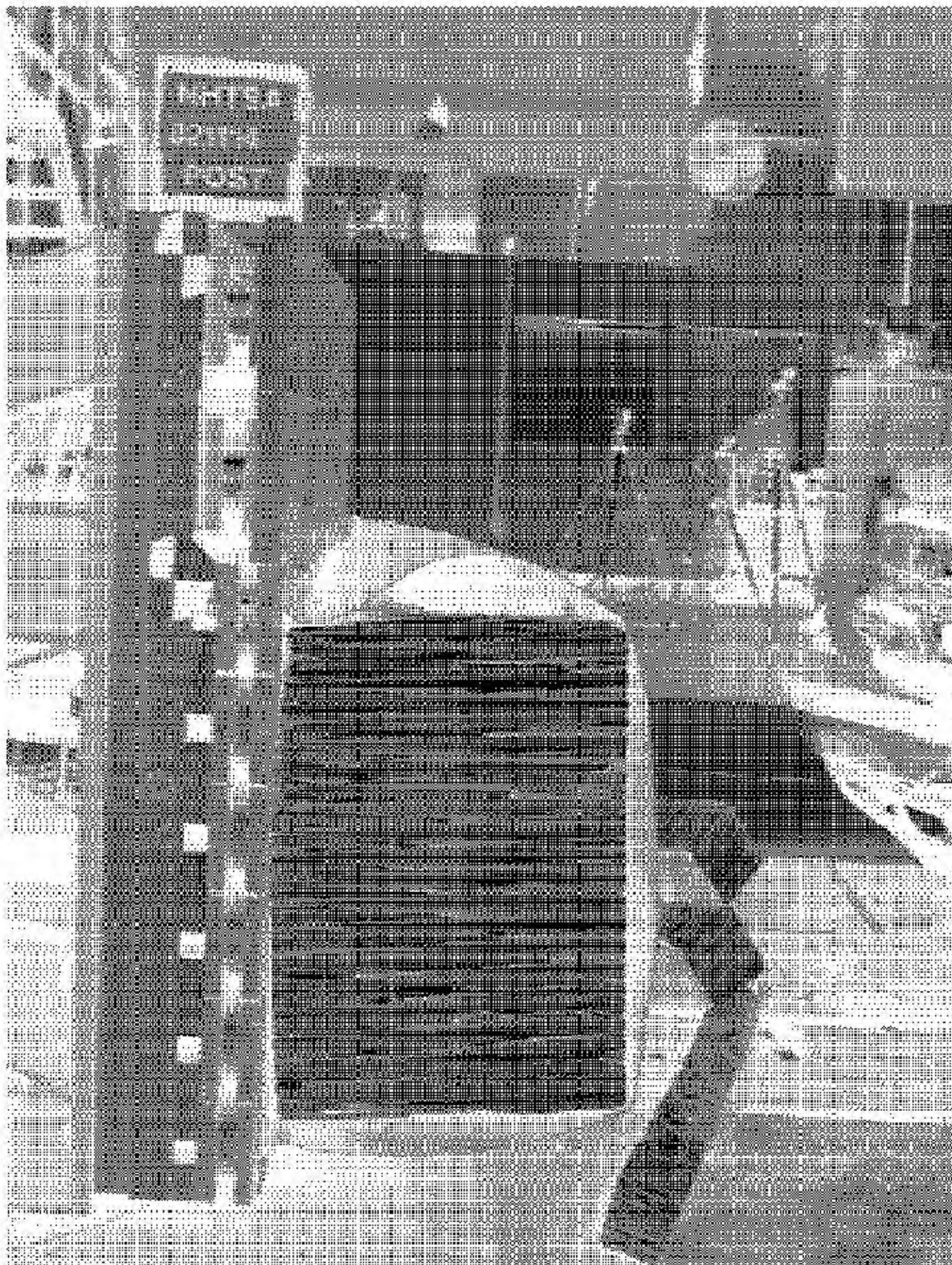


Image 43 Post-Test Offset Barrier Face Left Side View

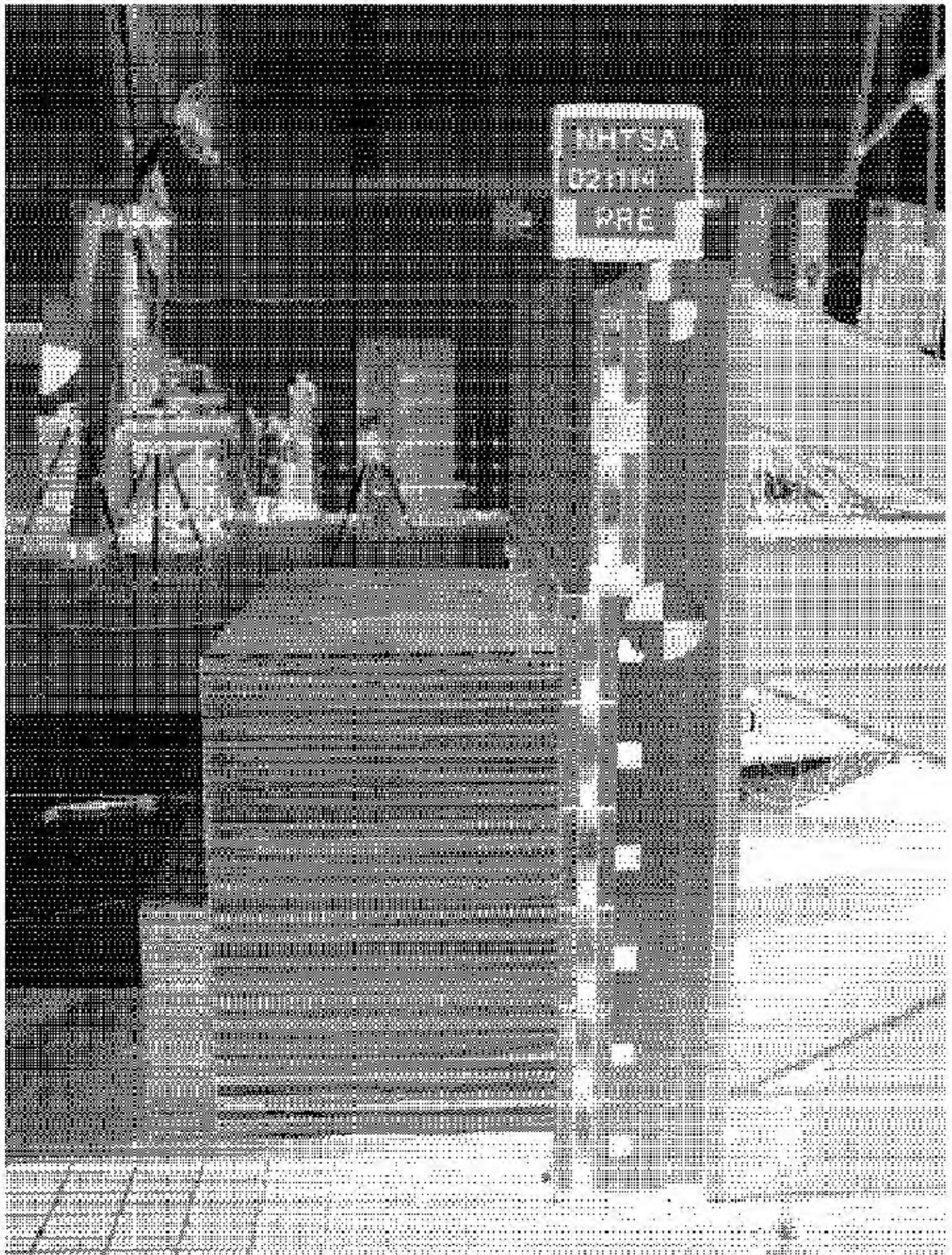


Image 44 Pre-Test Offset Barrier Face Right Side View

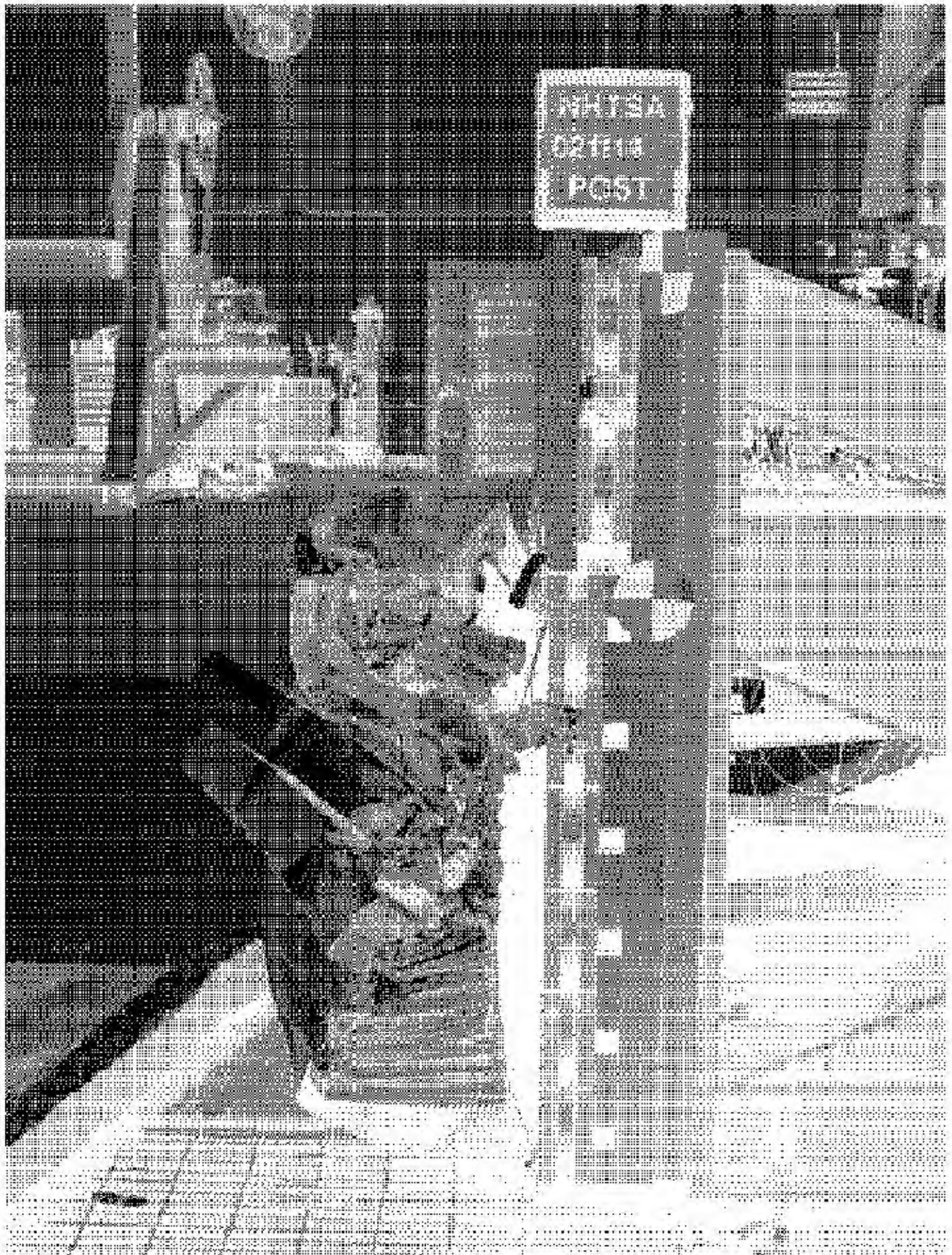


Image 45 Post-Test Offset Barrier Face Right Side View

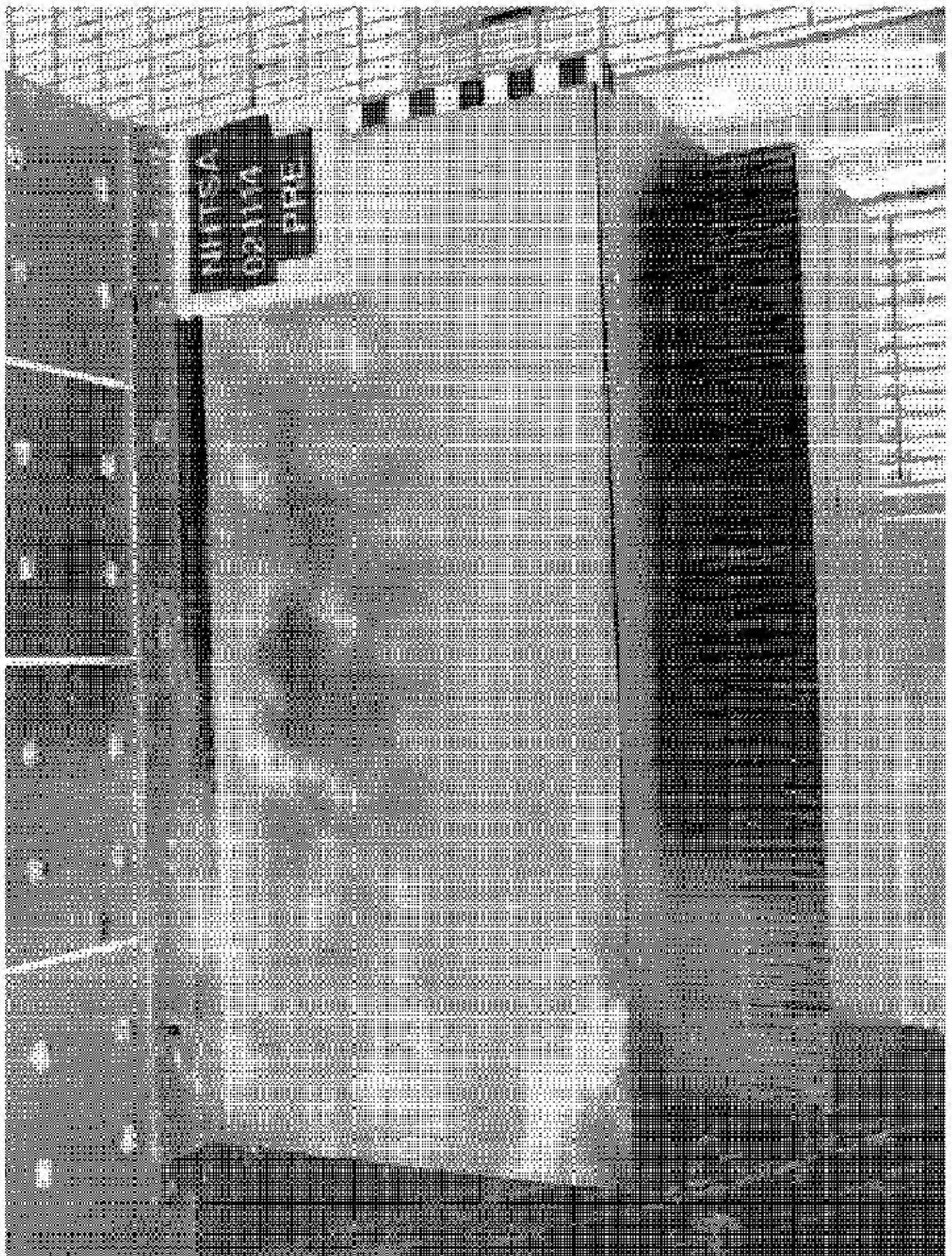


Image 46 Pre-Test Offset Barrier Face Overhead View

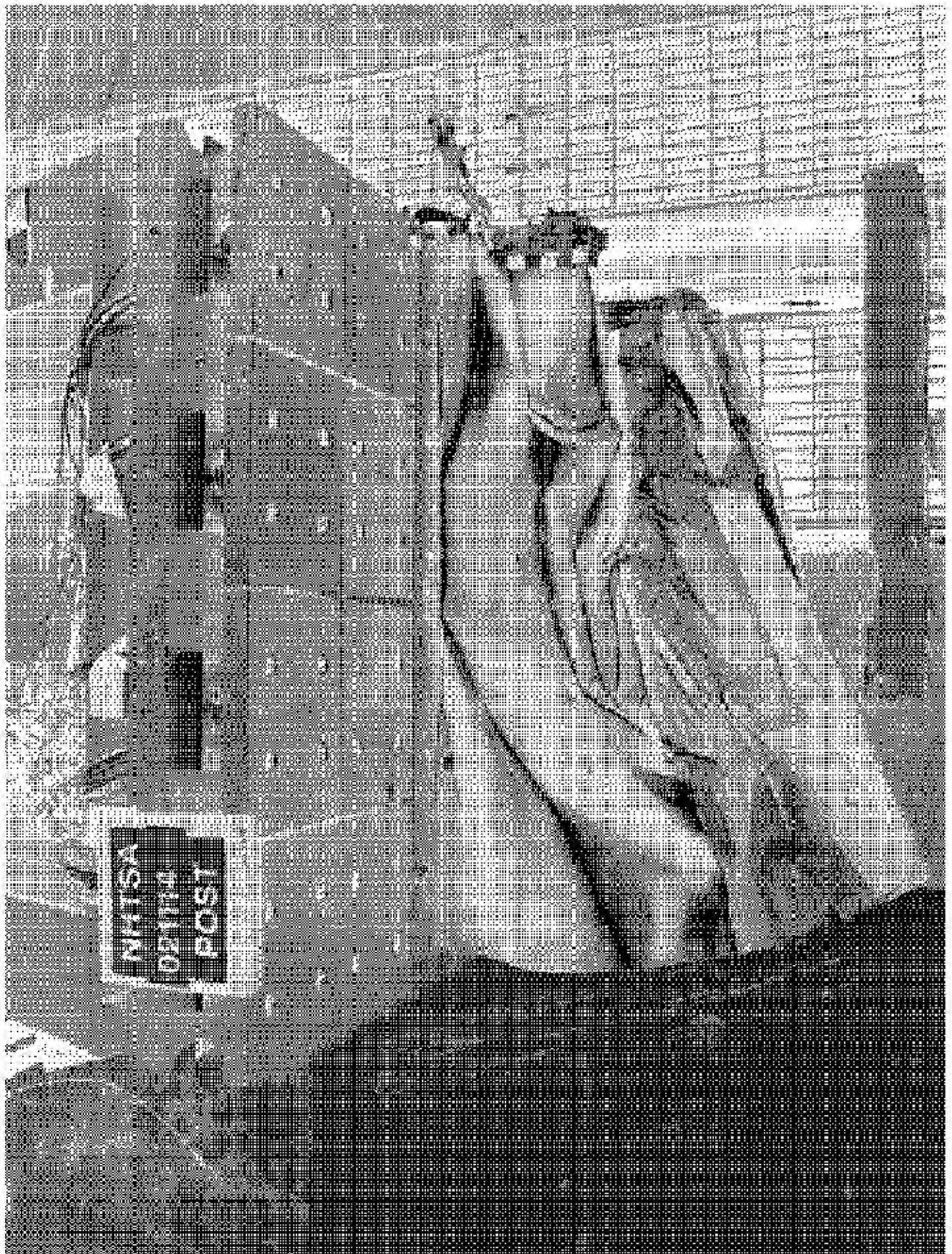


Image 47 Post-Test Offset Barrier Face Overhead View

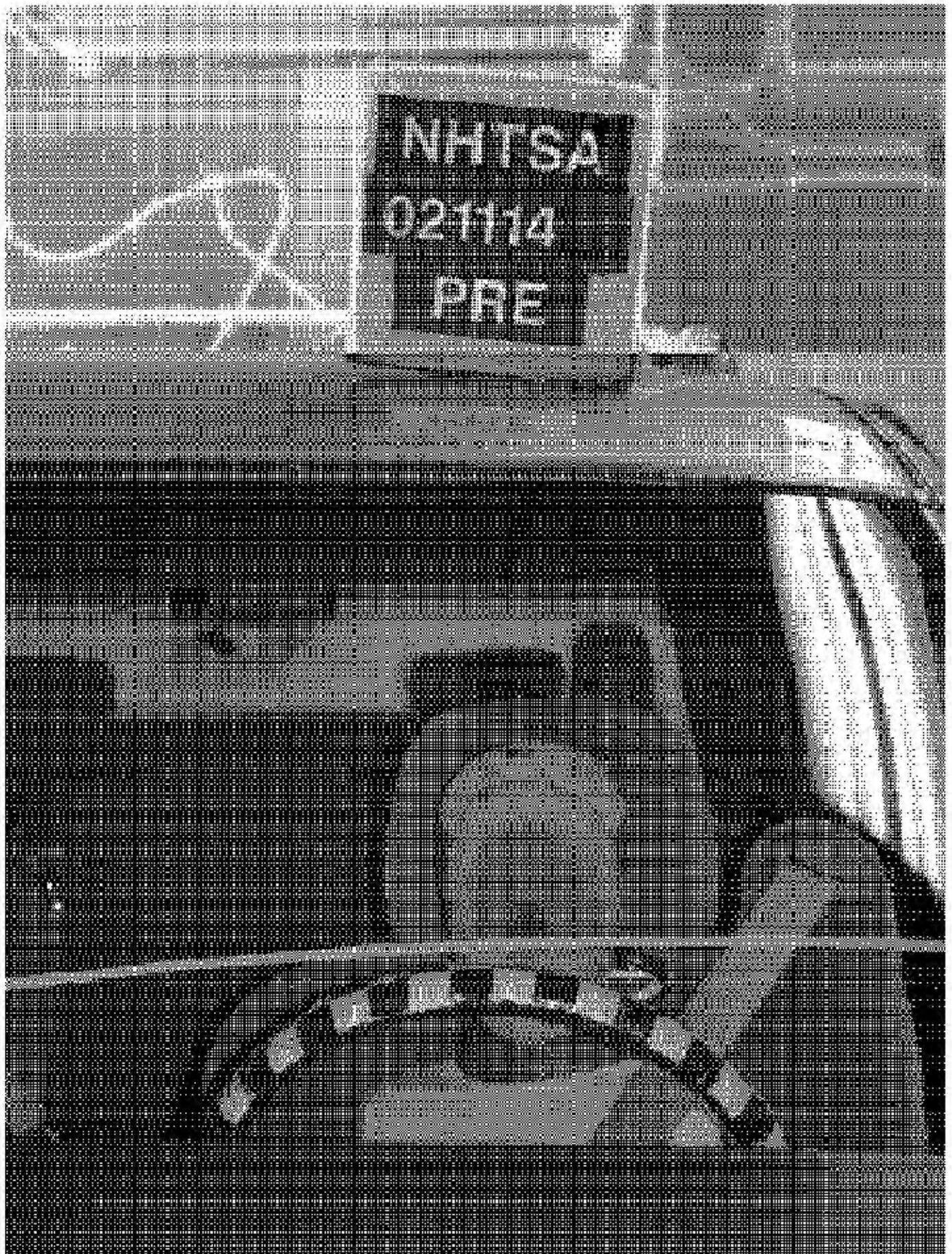


Image 48 Pre-Test Driver Dummy Front View

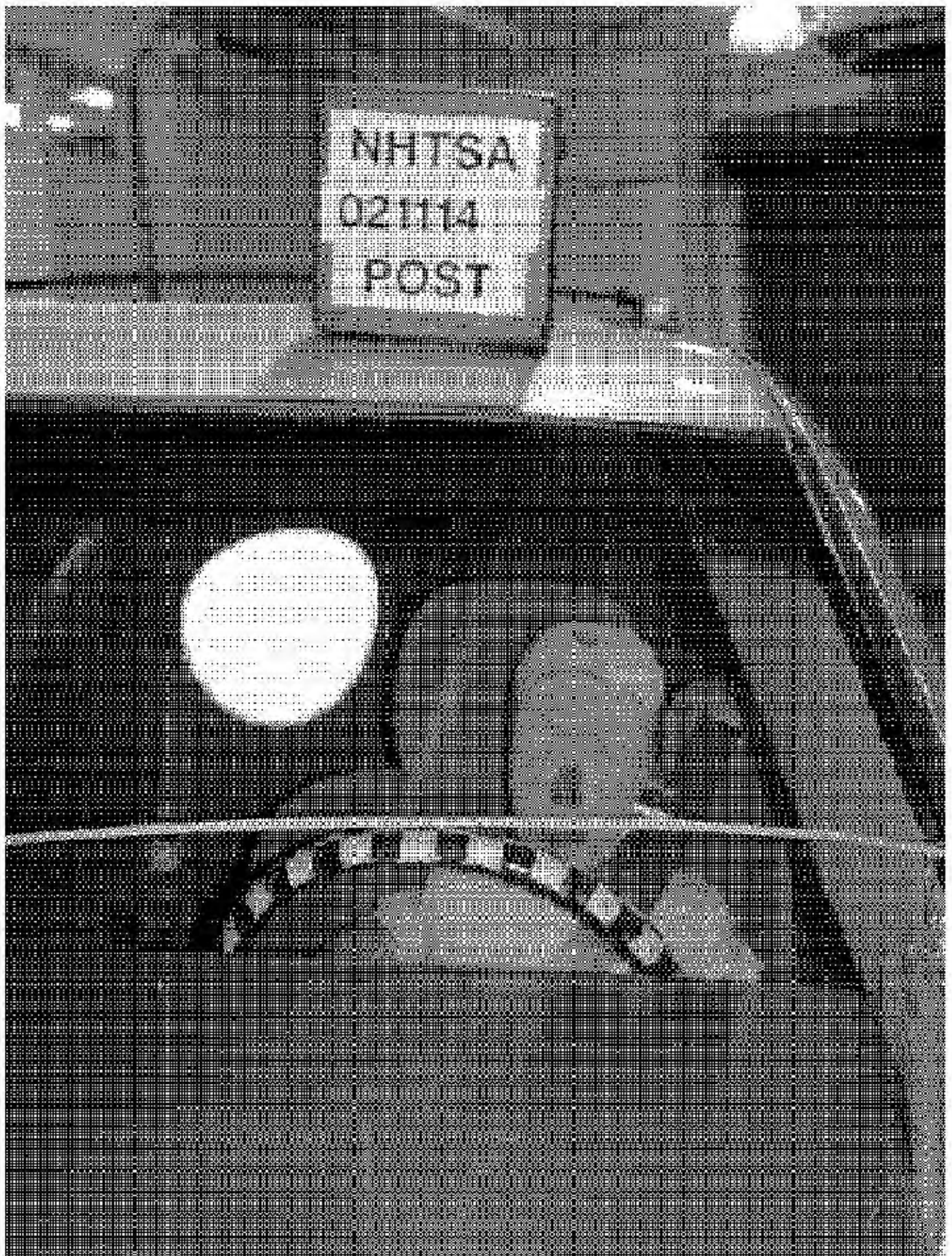


Image 49 Post-Test Driver Dummy Front View

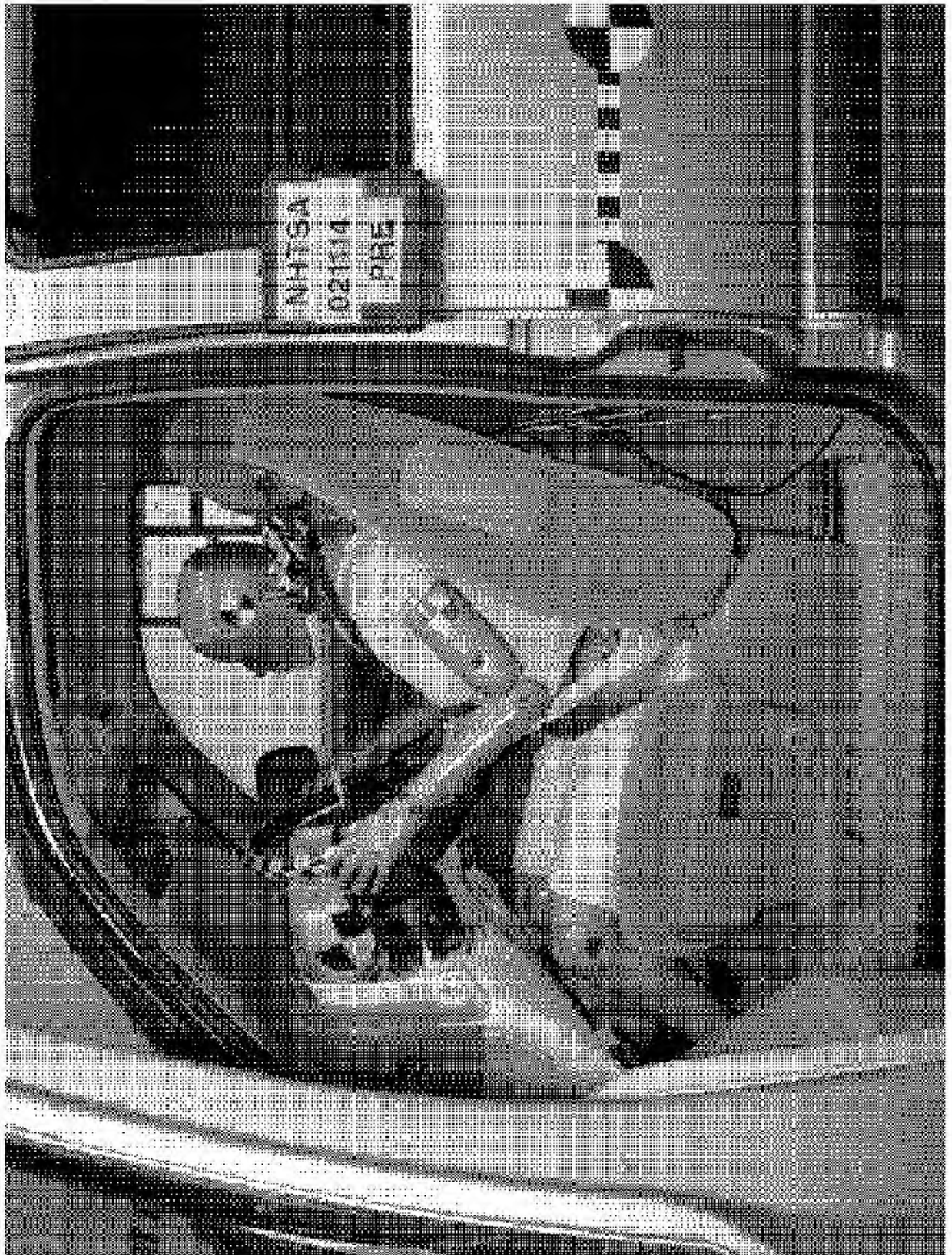


Image 50 Pre-Test Driver Dummy Position View

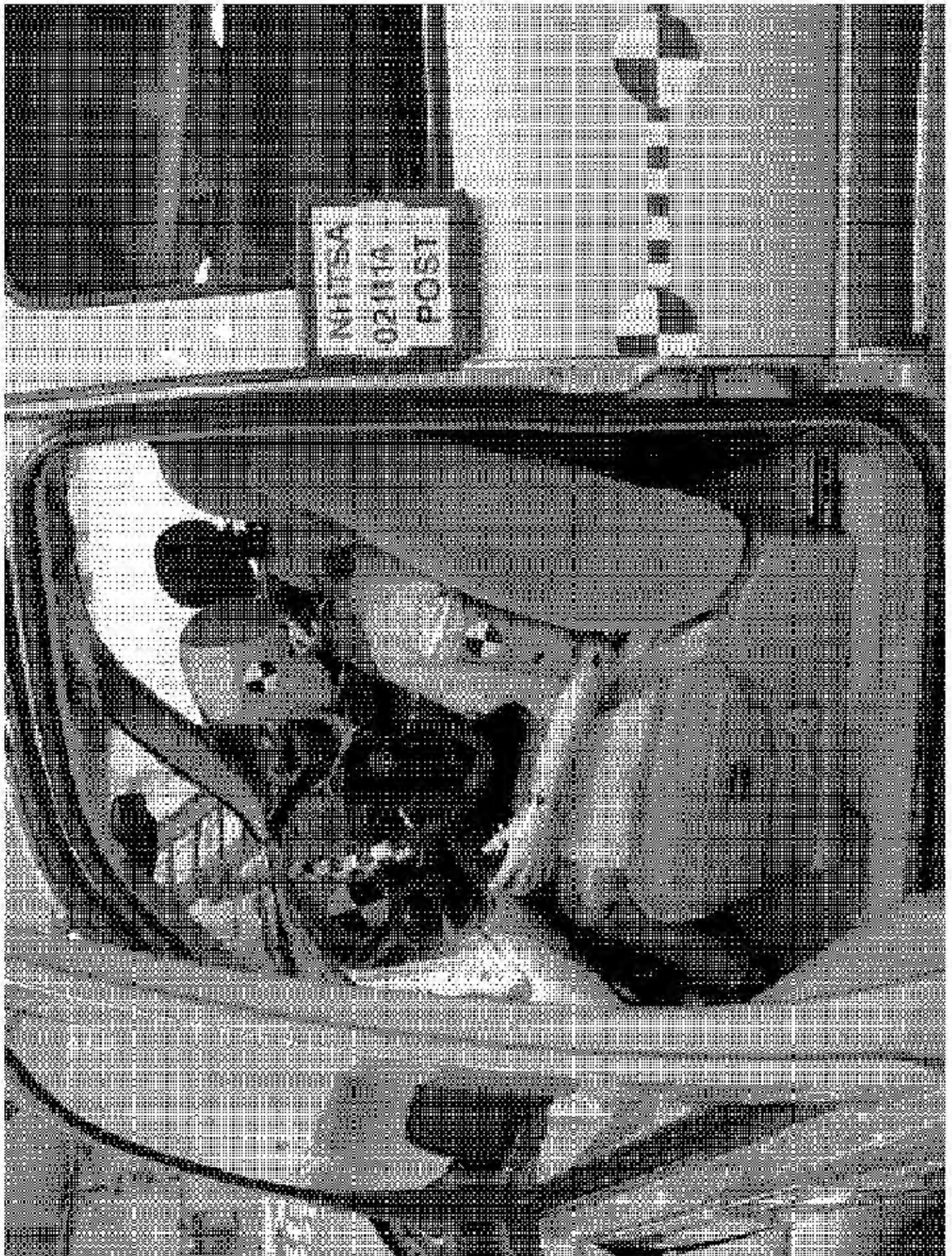


Image 51 Post-Test Driver Dummy Position View

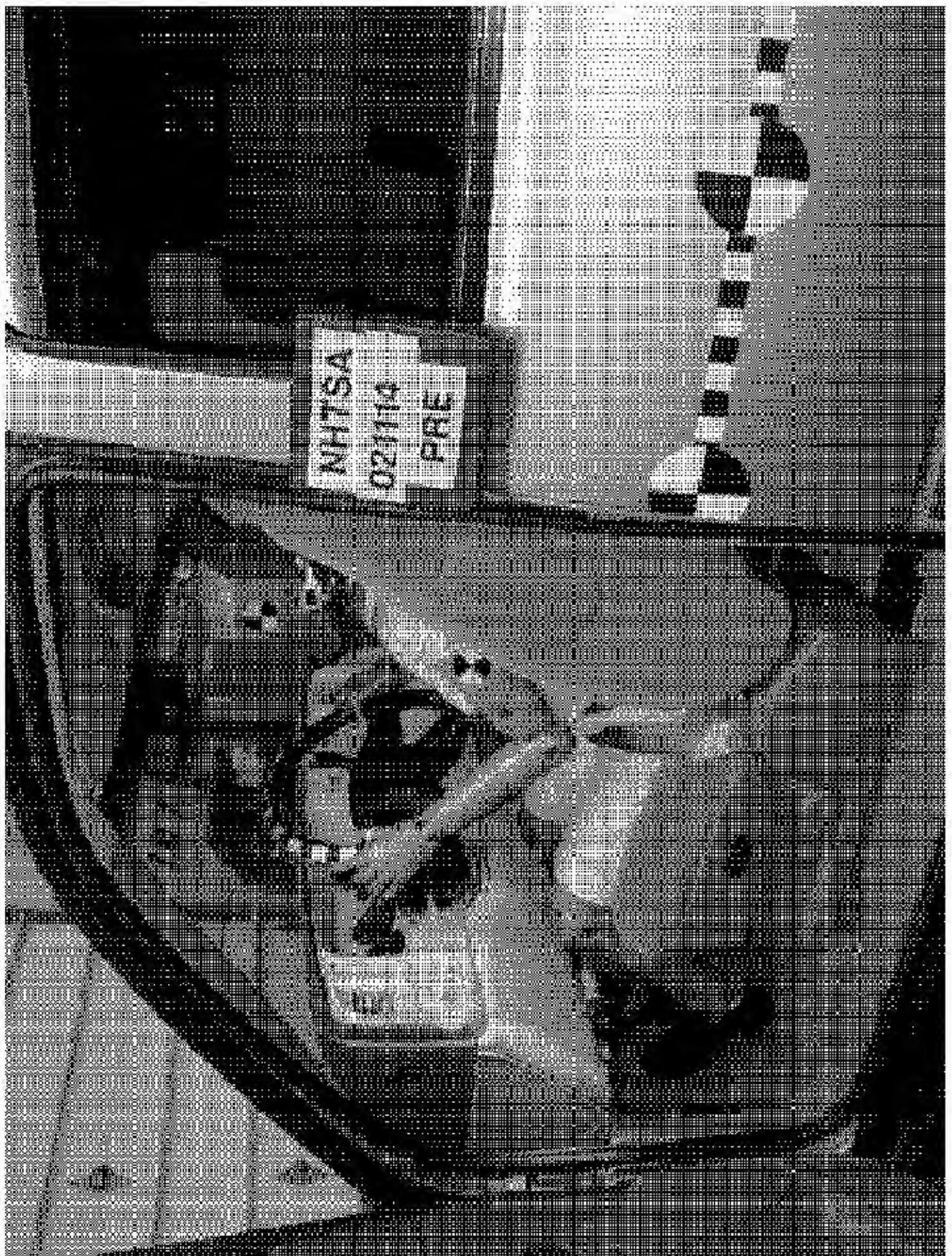


Image 52 Pre-Test Driver Dummy & Vehicle Intrusion View

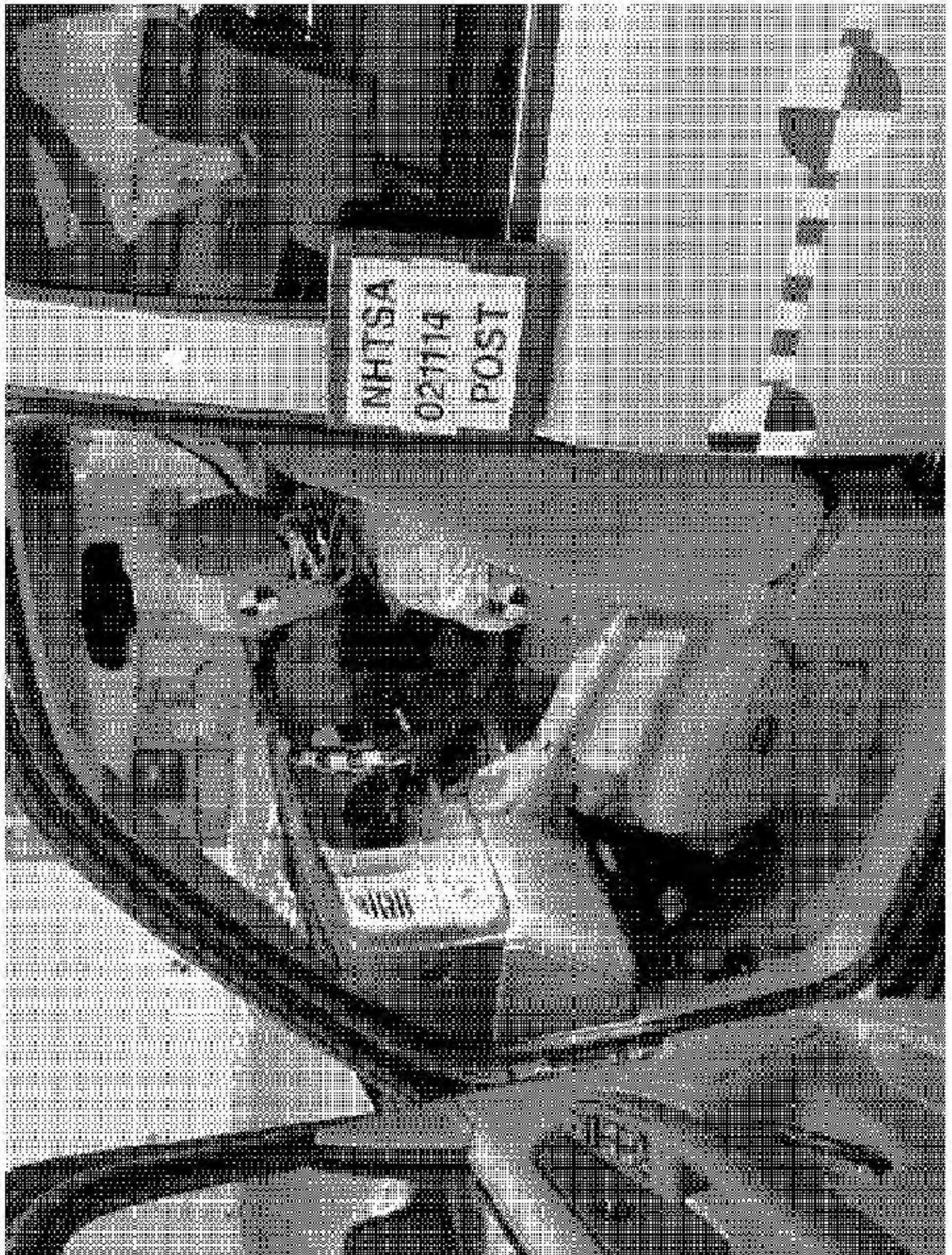


Image 53 Post-Test Driver Dummy & Vehicle Intrusion View

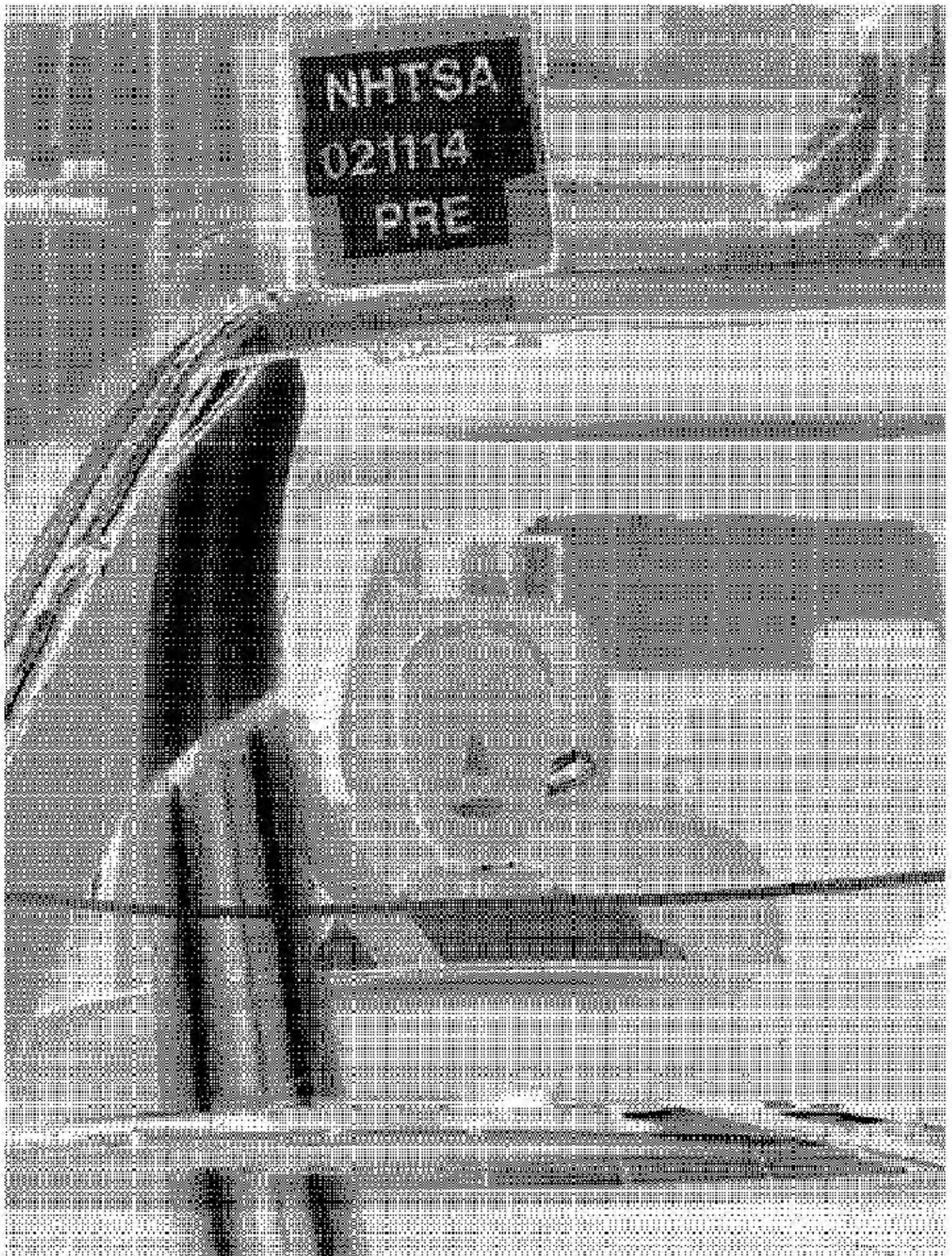


Image 54 Pre-Test Passenger Dummy Front View

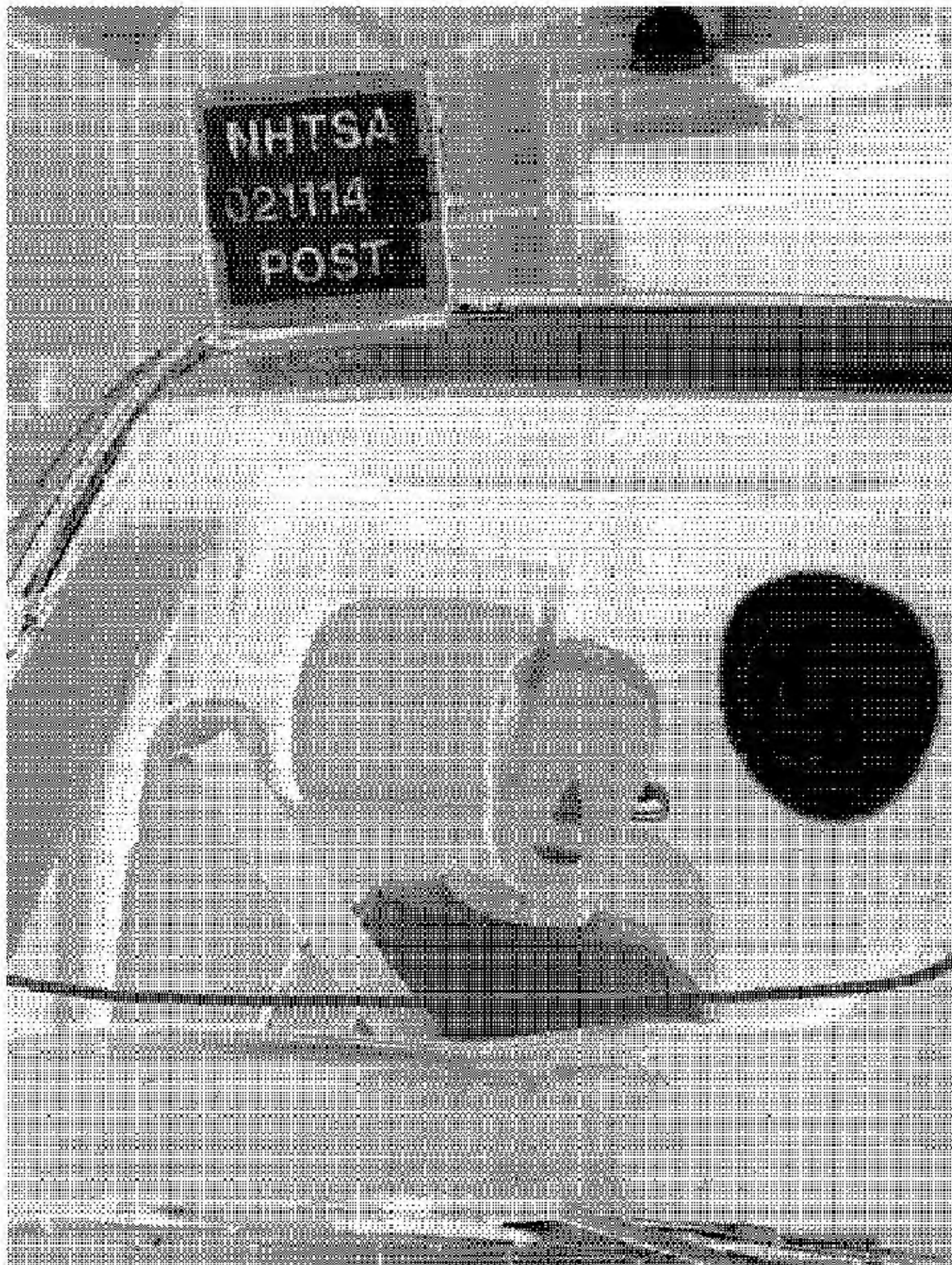


Image 55 Post-Test Passenger Dummy Front View

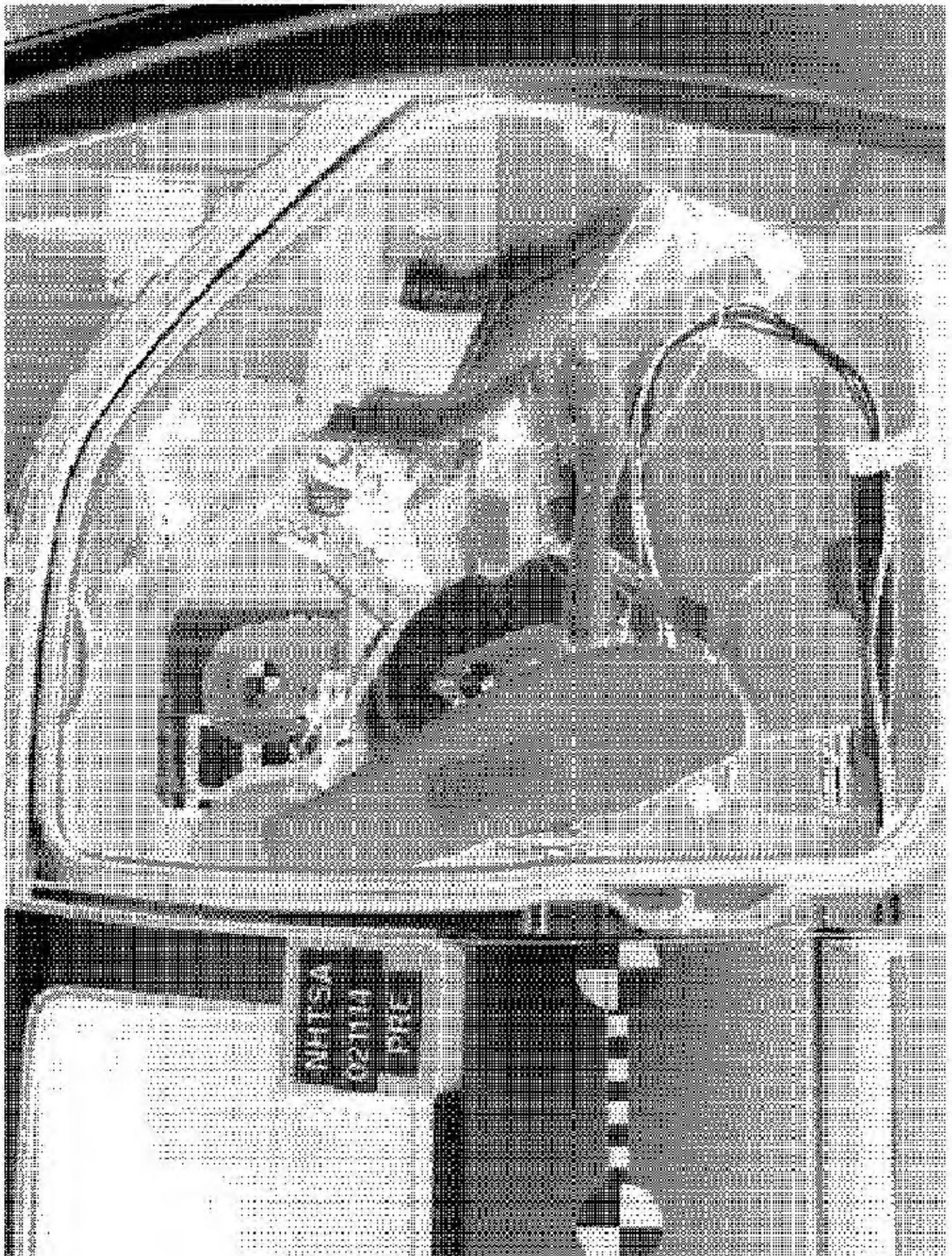


Image 56 Pre-Test Passenger Dummy Position View

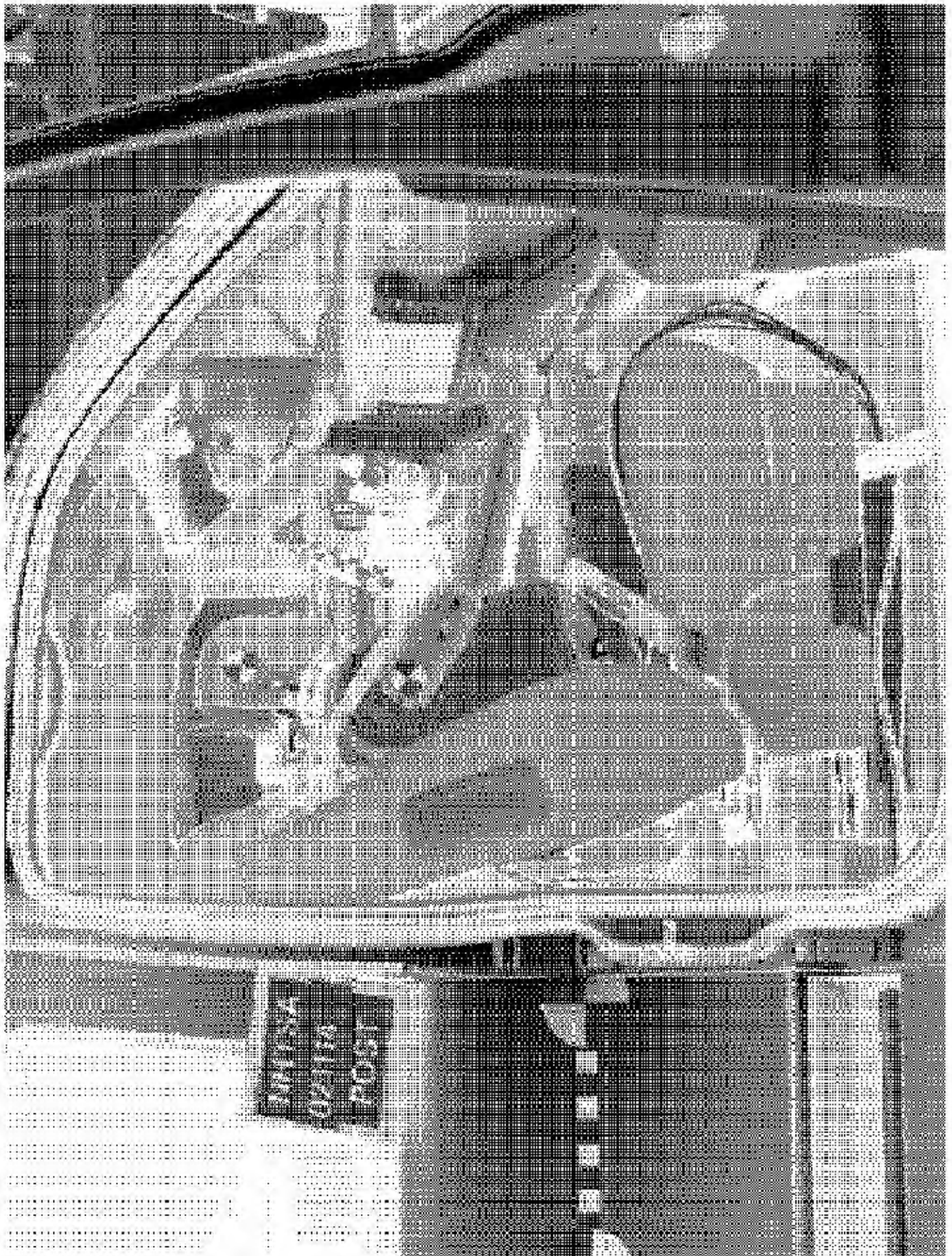


Image 57 Post-Test Passenger Dummy Position View

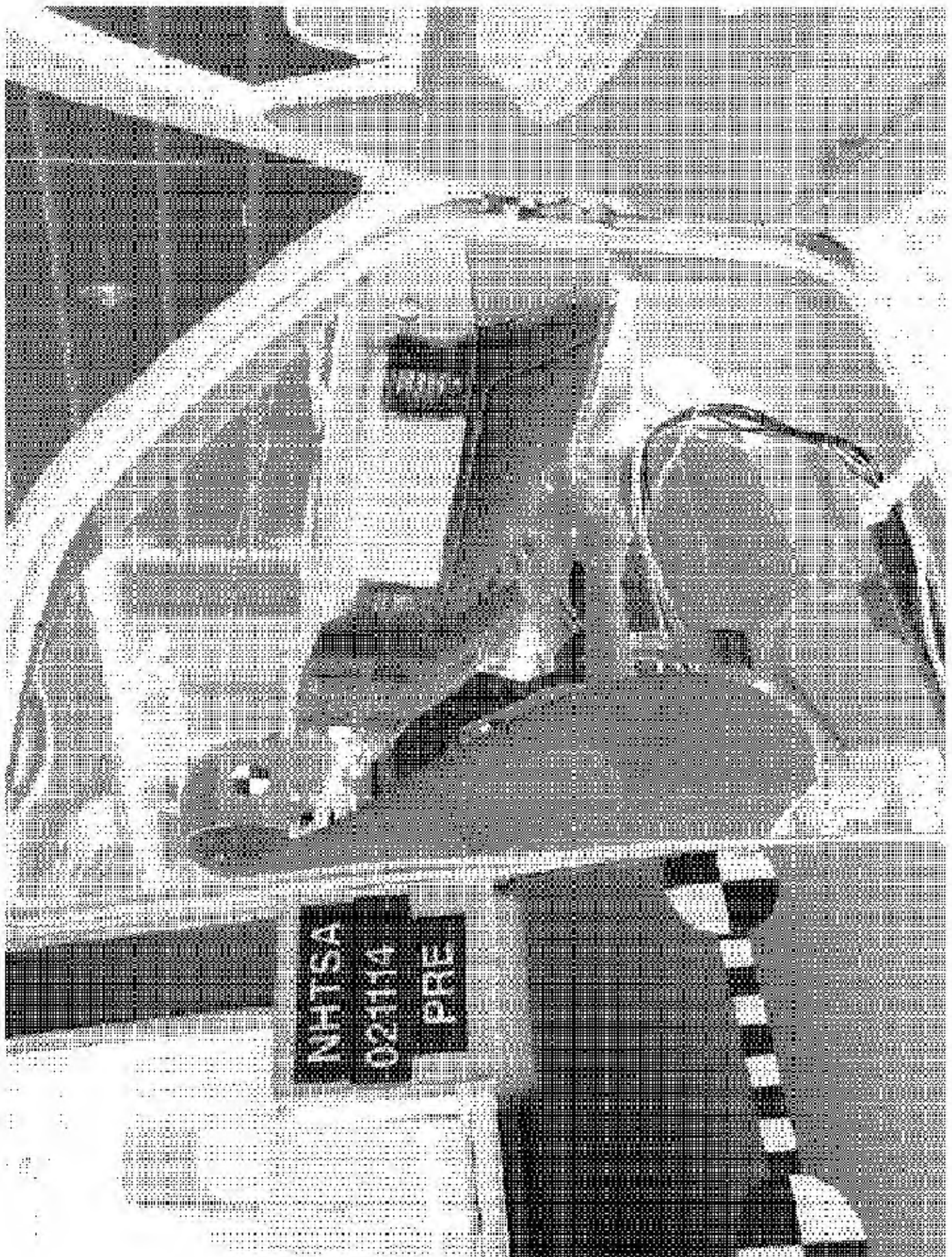


Image 58 Pre-Test Passenger Dummy & Vehicle Intrusion View

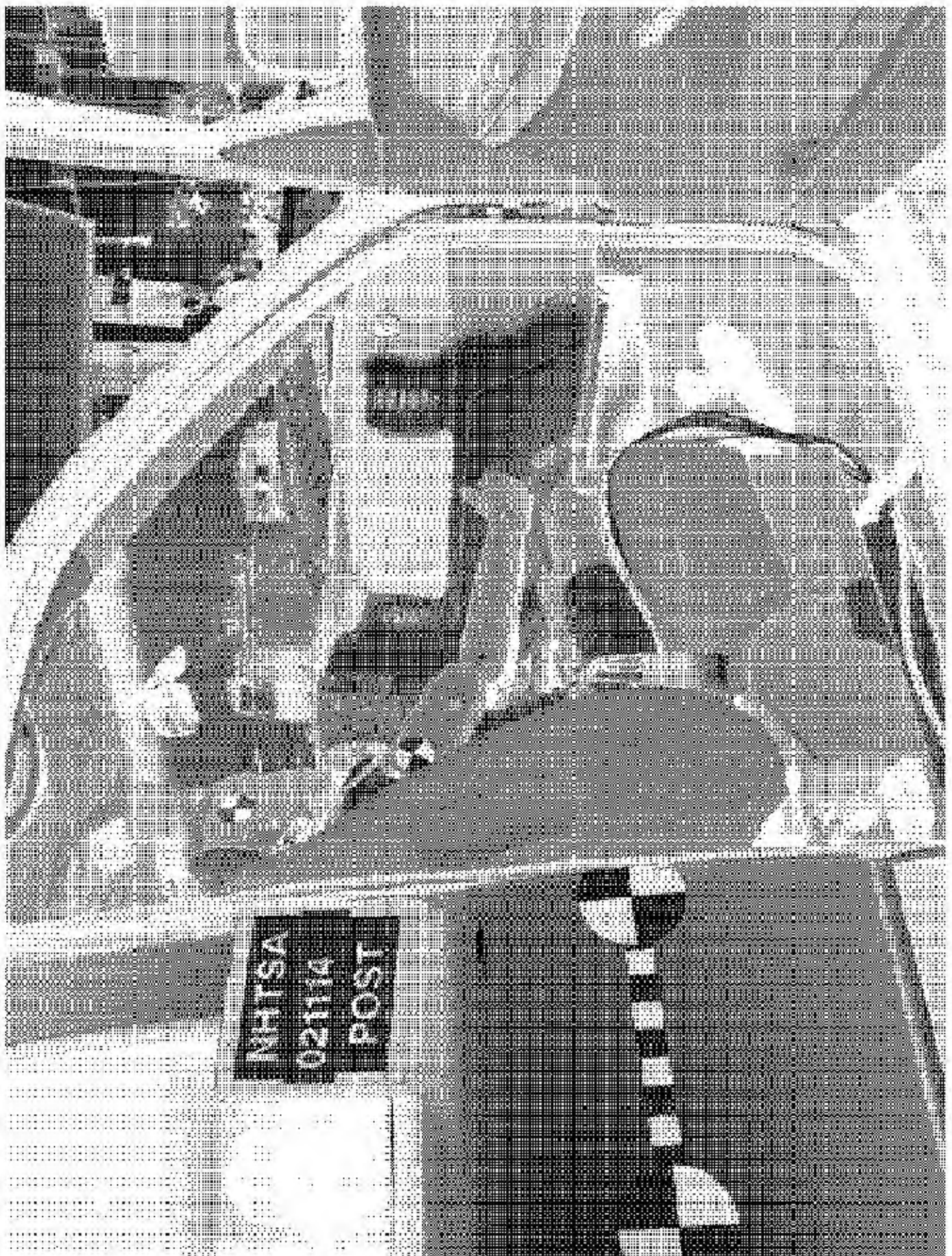


Image 59 Post-Test Passenger Dummy & Vehicle Intrusion View

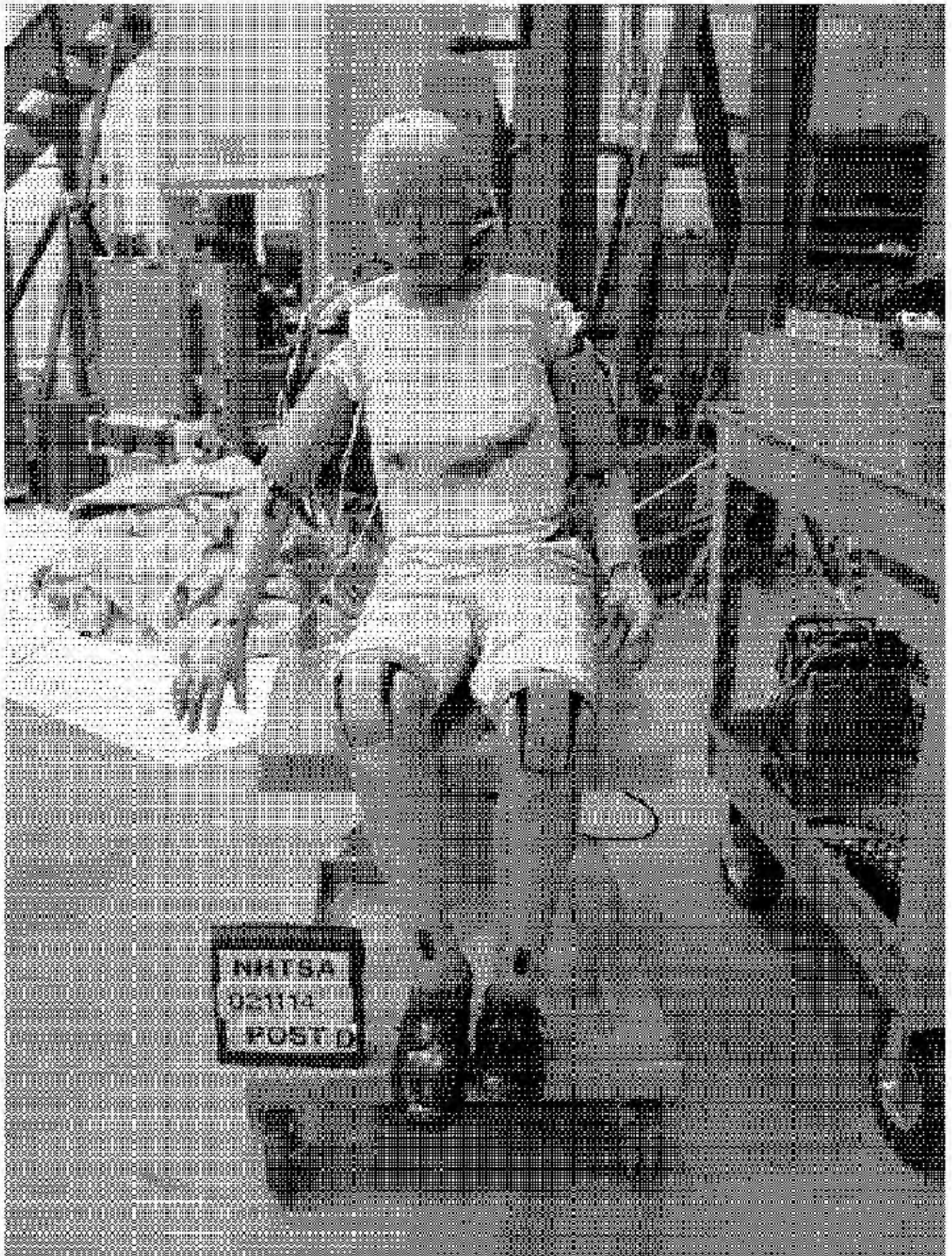


Image 60 Post-Test Driver Dummy View

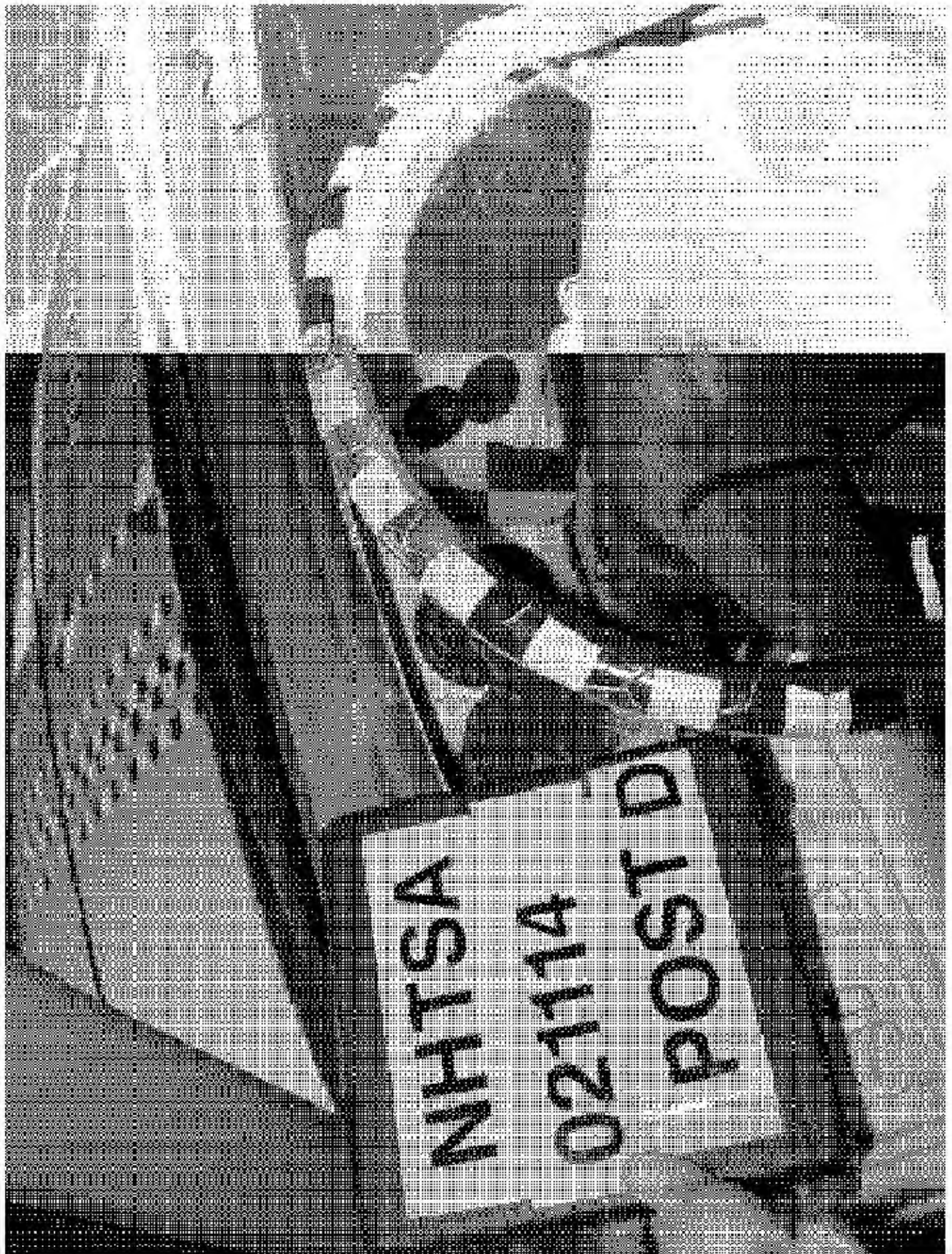


Image 61 Post-Test Driver Dummy Head Contact - View 1

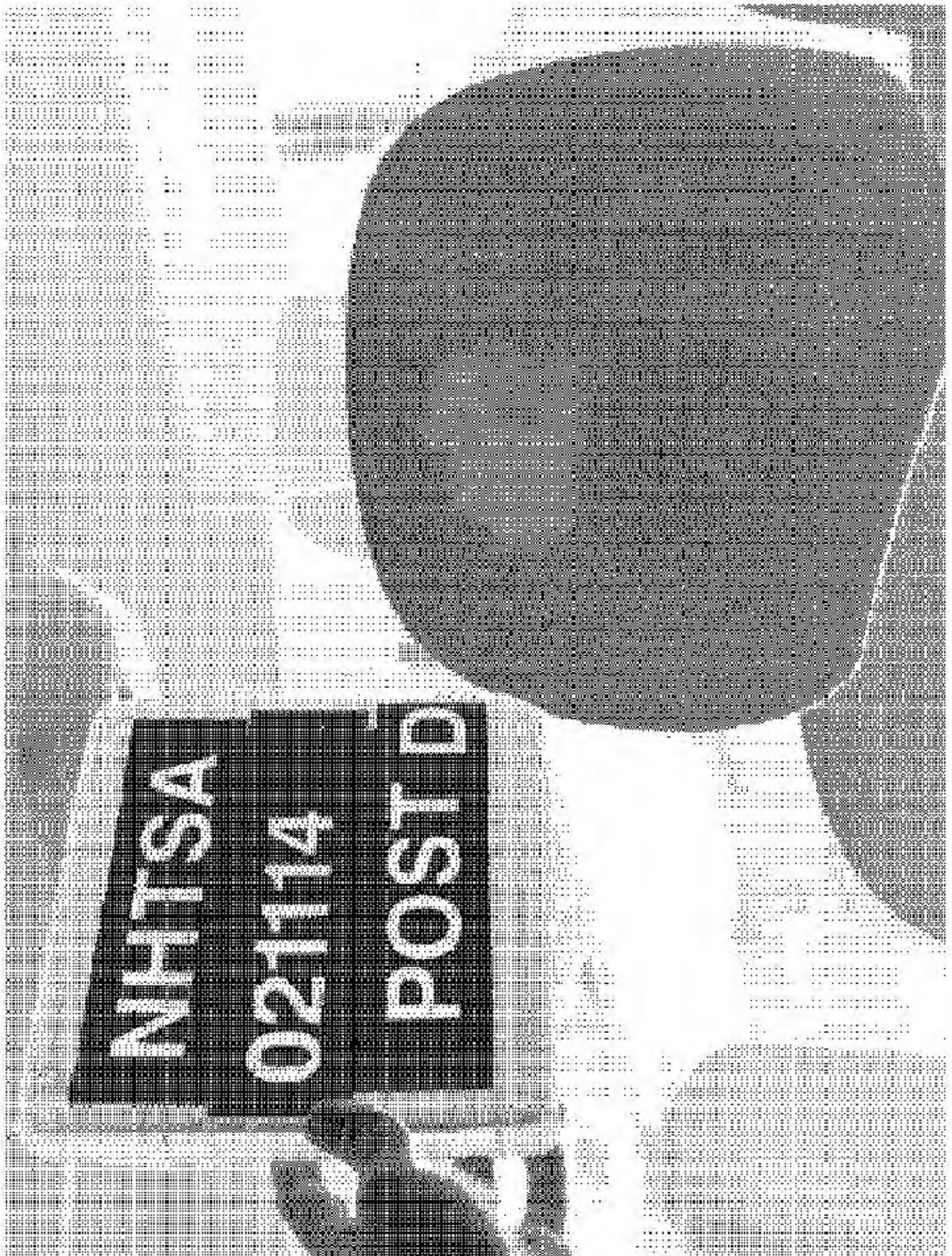


Image 62 Post-Test Driver Dummy Head Contact - View 2

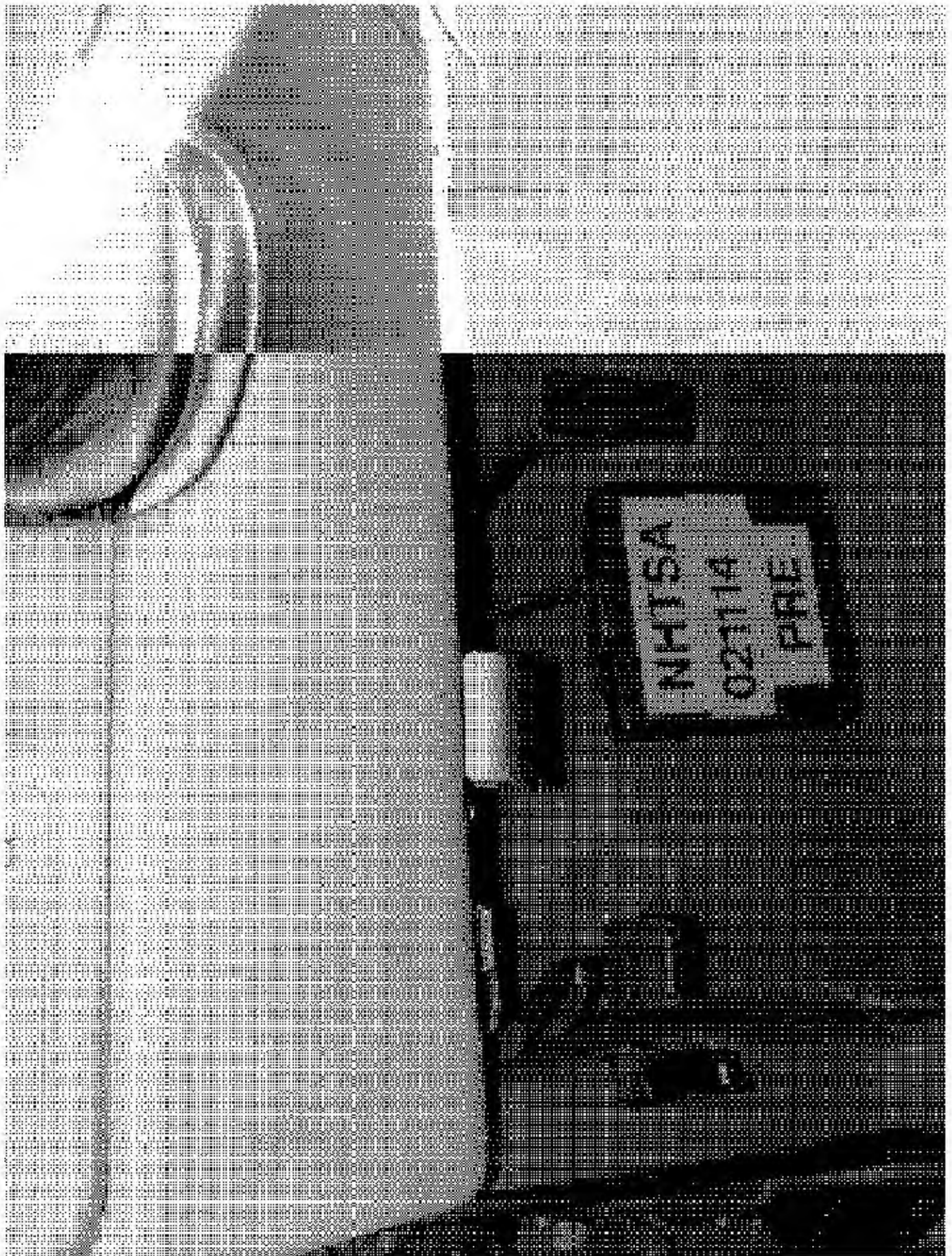


Image 63 Pre-Test Driver Dummy Knee Bolster View



Image 64 Post-Test Driver Dummy Knee Contact View

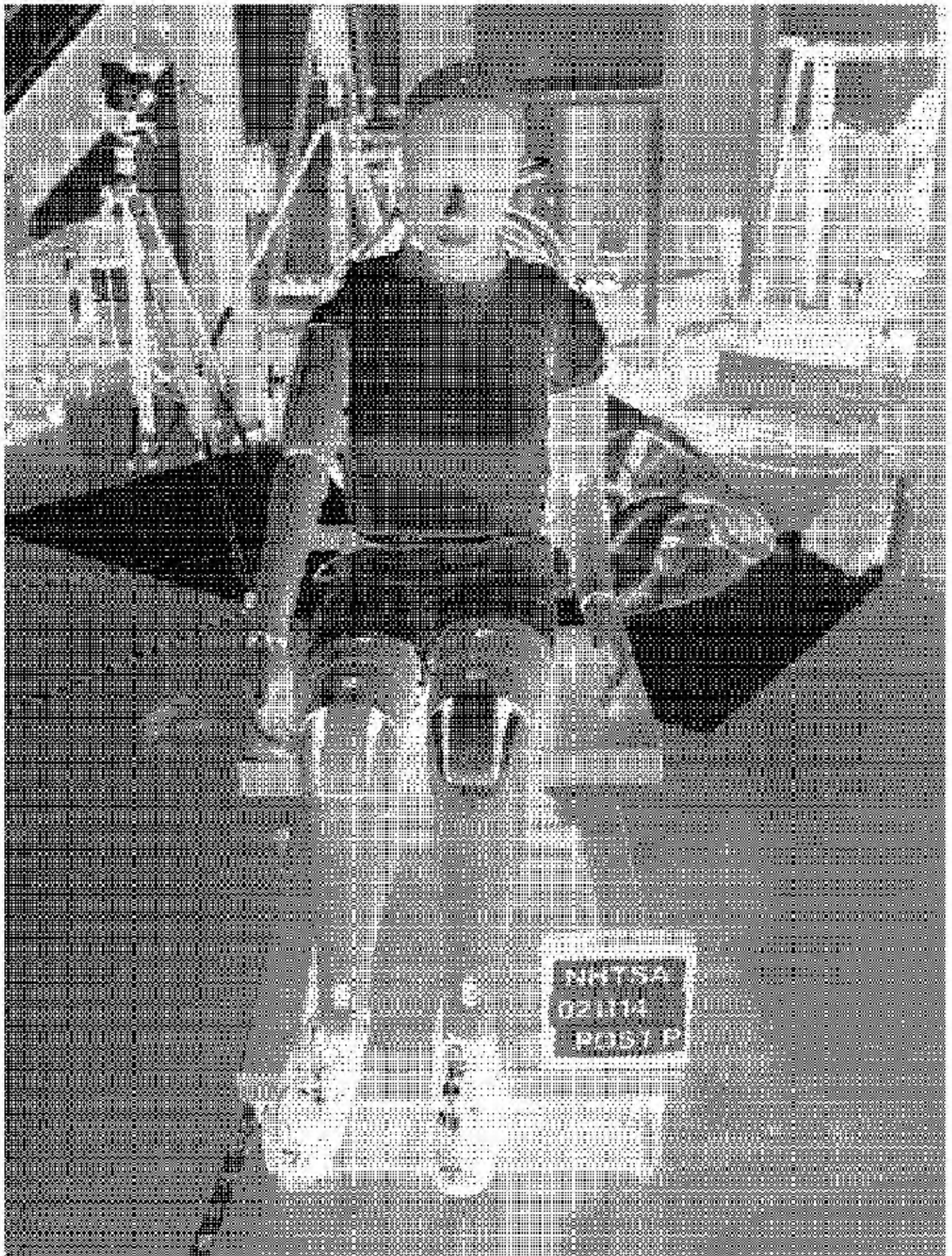


Image 65 Post-Test Passenger Dummy View



Image 66 Post-Test Passenger Dummy Head Contact - View 1

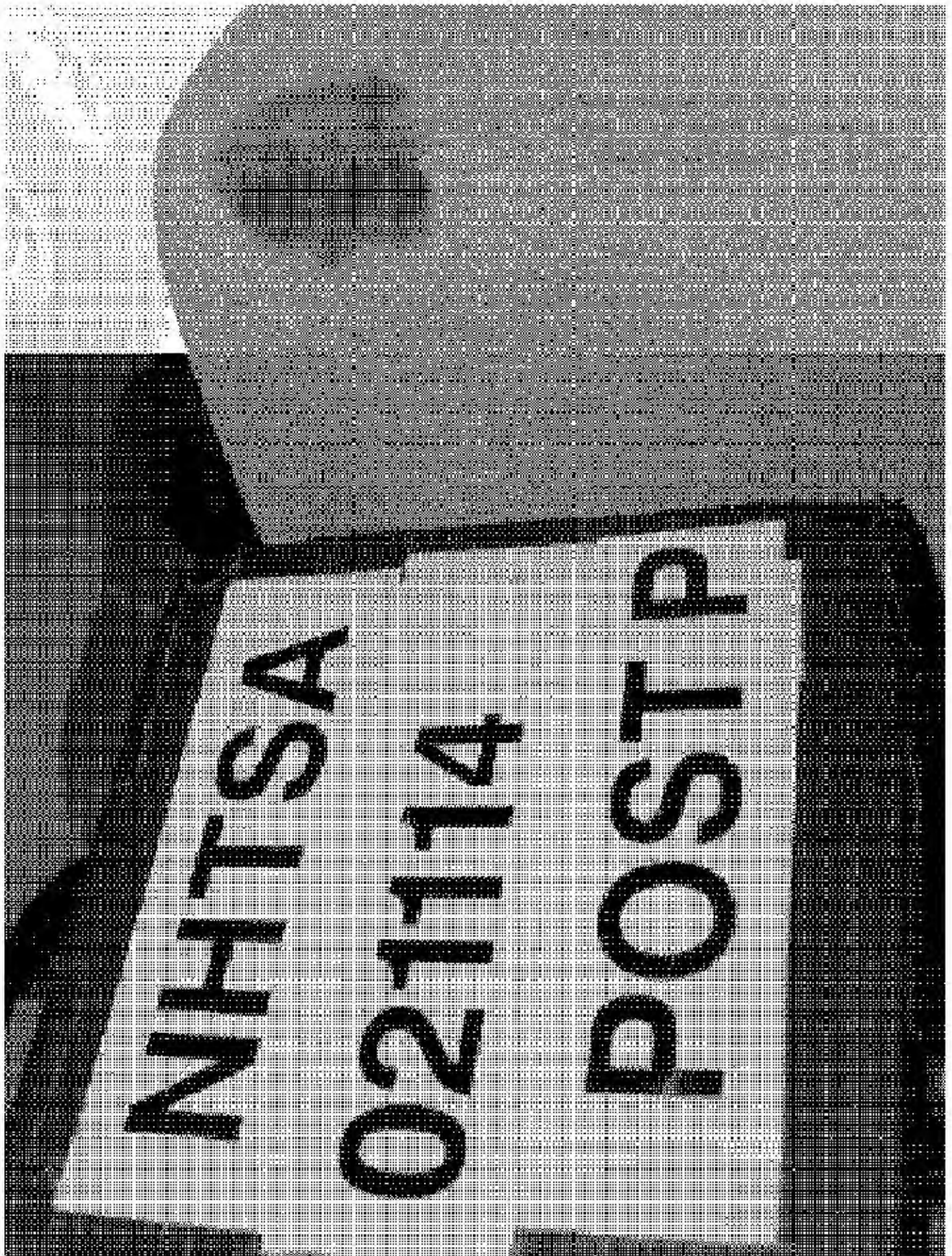


Image 67 Post-Test Passenger Dummy Head Contact - View 2

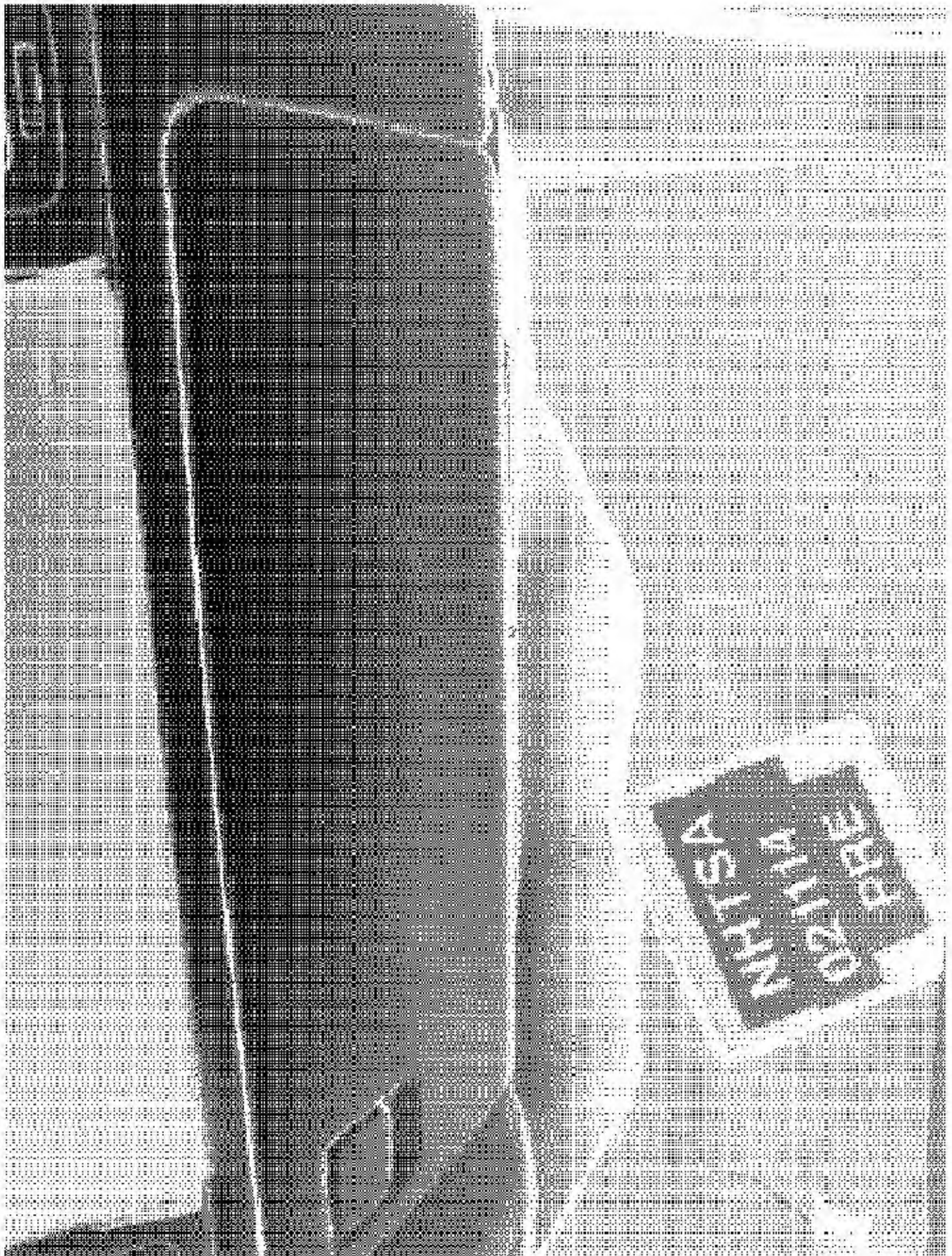


Image 68 Pre-Test Passenger Dummy Knee Bolster View



Image 69 Post-Test Passenger Dummy Knee Contact View

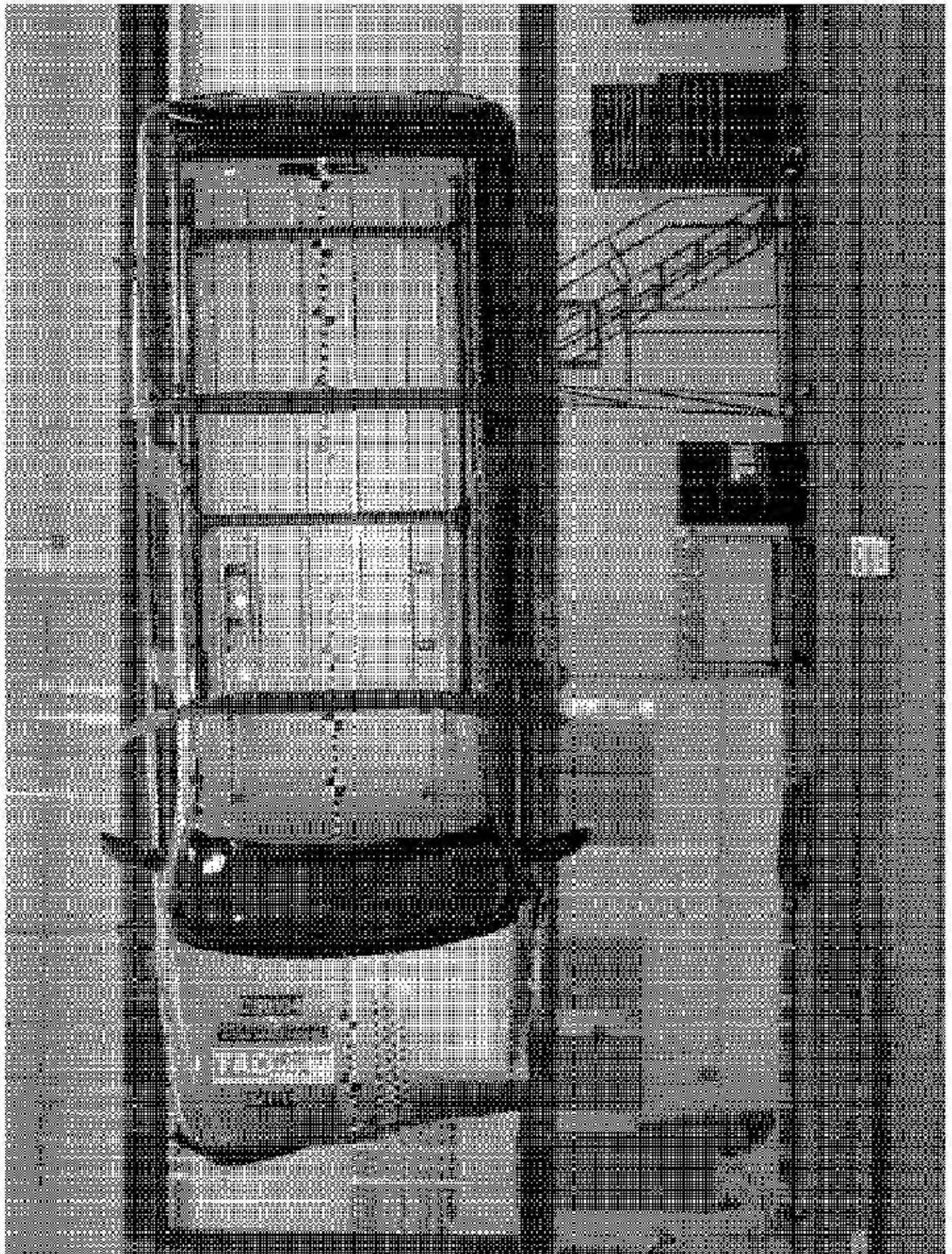


Image 70 Post-Test Vehicle on Static Rollover Device - 90° View

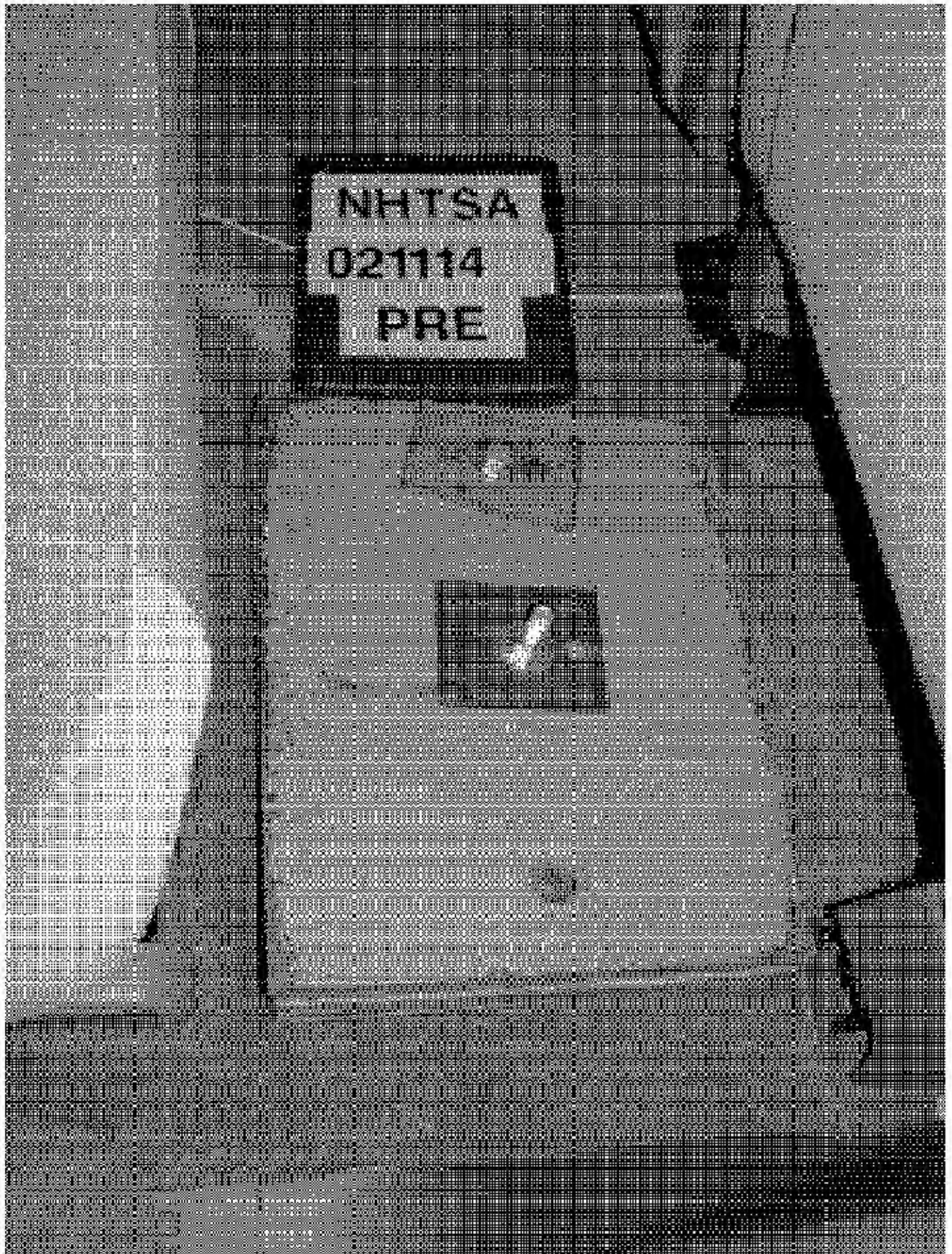


Image 71 Pre-Test Vehicle Ballast View

C-30104



WFO BY GENERAL MOTORS DE MEXICO, S. DE R. L. DE C.V. 10202

CUMMINS 1452K3320LB 1814KG (4000LB)
 3175KG (7000LB) 1814KG (4000LB)

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR
 VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF
 MANUFACTURE SHOWN ABOVE

3GNEC16253G108730 TYPE M.P.V.

MODEL	215006	TYPE	M.P.V.
SPR	TIRE SIZE	SPEED RPTG	RIM
FRT	P255/70R16	S	16X7J
RR	P255/70R16	S	16X7J
SPR	P255/70R16	S	16X8.5J
SEE OWNER'S MANUAL FOR MORE INFORMATION			
			COLD TIRE PRESSURE
			240KPA (35PSI)
			240KPA (35PSI)
			240KPA (35PSI)

Image 72 Pre-Test Vehicle Certification and Recommended Tire Pressure Label View

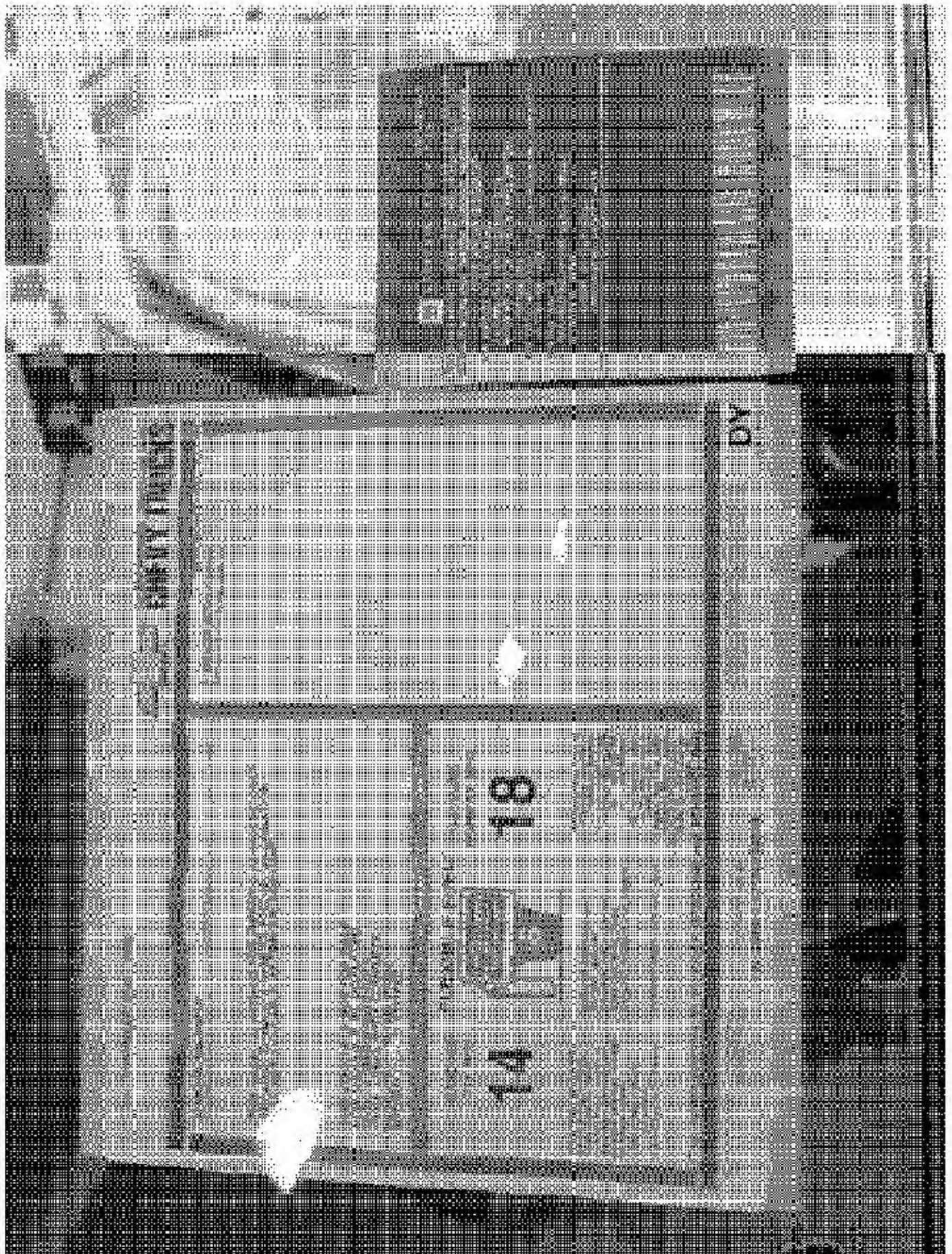


Image 73 Pre-Test Vehicle Window Sticker

Appendix A

Test Equipment List and Calibration Information

Dummy 421v(20x) Type HYBRID III 5th Manufacturer VRTC-421v HYBRID III 5th Female (208 Config) ICAL'd 6-2-01(DKS 10-24-02)J211

ChrName	Location	MModel	Name	Manufacturer	Sens./mV/VTU	Fullscale	Caldate	Pos Output	Mip
HBDXG	Head Accel X	EGE-73B6Q-20	02102116-A13	Endran	g	2000	9/24/02	Rr	1
HBDYG	Head Accel Y	EGE-73B6Q-20	02102116-A08	Endran	g	2000	9/24/02	Ll	1
HBDZG	Head Accel Z	EGE-73B6Q-20	02102116-A18	Endran	g	2000	9/24/02	Up	1
NEKXF	Neck Force X	IF-205	IF-205-130-FX	FTSS	N	8896	3/18/02	Hd Hd Cat Br	1
NEKYF	Neck Force Y	IF-205	IF-205-130-FY	FTSS	N	8896	3/18/02	Hd Hd Cat RL	0
NEKZF	Neck Force Z	IF-205	IF-205-130-FZ	FTSS	N	13344	3/18/02	Hd Up Cat Dr	0
NEKXM	Neck Moment X	IF-205	IF-205-130-MX	FTSS	N m	282.5	3/18/02	Rr Faw to Rt Shld	1
NEKYM	Neck Moment Y	IF-205	IF-205-130-MY	FTSS	N m	282.5	3/18/02	Chin to Scrum	0
NEKZM	Neck Moment Z	IF-205	IF-205-130-MZ	FTSS	N m	282.5	3/18/02	Chin to Lt Shld	0
CSTXG	Chest Accel X	EGE-73B6Q-20	B02A25-N03	Endran	g	2000	8/5/02	Fwd	0
CSTYG	Chest Accel Y	EGE-73B6Q-20	02A18-NE2	Endran	g	2000	8/5/02	Lt	1
CSTZG	Chest Accel Z	EGE-73B6Q-20	B02A25-N10	Endran	g	2000	8/5/02	Up	1
CSTXD	Chest Deflection X	14CPI-2897	14CPI-2897-1355	Servo	mm	1400	3/25/02	Stum Away Faw Spu	0
PEVXG	Pelvis Accel X	7264-200LC	AF0K3	Endeven	g	2000	8/5/02	Rwd	1
PEVYG	Pelvis Accel Y	EGE-73B6Q-20	02A16-A26	Endran	g	2000	8/5/02	Ll	1
PEVZG	Pelvis Accel Z	EGE-73B6Q-20	02A18-N15	Endran	g	2000	8/5/02	Up	1
LFMPZF	Left Femur Force Z S37	2430	2430-739	GSE	N	13344	3/18/02	Knee Hd Pel Rr	0
RPMZP	Right Femur Force Z VRTC-4	2430	2430-760	GSE	N	13344	3/18/02	Knee Hd Pel Rr	0

Dummy 426v Type HYBRID III SIE Description VRTC - 426v HYBRID III 5th Female ICAL'd 11-06-01(DKS11-13-02)J211

Chname	Location	Model	Name	Manufacturer	Sens./mV/V/U	Fullscale	Caldate	Pos Output	Flap
HEDXG	Head Accel X	7264C-2KLC-2-	P17837	Endevco	0.01415 g	2000	11/6/02	Rr	1
HEDYG	Head Accel Y	7264C-2KLC-2-	P17559	Endevco	0.0141006 g	2000	11/6/02	Ld	1
HEDZG	Head Accel Z	7264C-2KLC-2-	P 5856	Endevco	0.01471 g	2000	11/6/02	Up	1
NEKXF	Neck Force X	IF-205	IF-205-287-FX	FTSS	0.000178125 N	8896.4	11/6/02	Hd Pd/Cst Rr	1
NEKYP	Neck Force Y	IF-205	IF-205-287-FY	FTSS	0.000171009 N	8896.4	11/6/02	Hd Pd/Cst Rr	0
NEKZF	Neck Force Z	IF-205	IF-205-287-FZ	FTSS	0.000090436 N	13344.6	11/6/02	Hd Up/Cst Dn	0
NEKXM	Neck Moment X	IF-205	IF-205-287-MX	FTSS	0.005443186 N-m	282.5	11/6/02	Rt Rtr to Rt Shld	0
NEKYM	Neck Moment Y	IF-205	IF-205-287-MY	FTSS	0.005449912 N-m	282.5	11/6/02	Chin to Strnt	0
NEKZM	Neck Moment Z	IF-205	IF-205-287-MZ	FTSS	0.008 N-m	282.5	11/6/02	Chn to Lt Shld	0
CSTXG	Chest Accel X	7264C-2KLC-2-	P16194	Endevco	0.0140458 g	2000	11/6/02	Fwd	0
CSTYG	Chest Accel Y	7264C-2KLC-2-	P16517	Endevco	0.01507 g	2000	11/6/02	L-T	1
CSTZG	Chest Accel Z	7264C-2KLC-2-	P16428	Endevco	0.0148729 g	2000	11/6/02	Up	1
CSTXD	Chest Deflection X	14C31-2897	14C31-2897-1392	Servo	1.6878 mm	100	11/13/02	Strntn Away Frm Spn	0
LFMZP	Left Femur Force Z #2	2121	2121-0257	Dencon	0.000100245 N	13344.6	11/6/02	Knee Hd Pd Rr	0
RPMZF	Right Femur Force Z #12	2121	2121-0258	Dencon	0.000090478 N	13344.6	11/6/02	Knee Pd Pd Rr	0

Channel Report

11/14/2002 8:06:53 AM

Name of Test 021114 System MINIDAU Name of DAU DATA

Chan.#	Sensor #	Macrometric	Description	Dir.	Range	Pol. Cal.	Group	Mfg.	Model
0001	EVENT	SYNCA	SYNCA		5.12	-	OK	TRC	Event
0002	02102116-A13	HEADXG1	Head Accel X	Rr	795.03105	-	OK	Entran	EGE-73B6Q-200
0003	02102116-A08	HEADYG1	Head Accel Y	Lft	801.25195	-	OK	Entran	EGE-73B6Q-200
0004	02102116-A18	HEADZG1	Head Accel Z	Up	812.69841	-	OK	Entran	EGE-73B6Q-200
0005	1F-205-180-FX	NEKXF1	Neck Force X	Hd	13364.552	-	OK	FTSS	IF-205
0006	1F-205-180-FY	NEKYF1	Neck Force Y	Hd	13375.155	+	OK	FTSS	IF-205
0007	1F-205-180-FZ	NEKZF1	Neck Force Z	Hd	20033.115	+	OK	FTSS	IF-205
0008	1F-205-180-MX	NEKXM1	Neck Moment X	Rt Ear	424.97280	-	OK	FTSS	IF-205
0009	1F-205-180-MY	NEKYM1	Neck Moment Y	Chin	425.08793	-	OK	FTSS	IF-205
0010	1F-205-180-MZ	NEKZM1	Neck Moment Z	Chin	425.91182	+	OK	FTSS	IF-205
0011	B02A25-N03	CSTXG1	Chest Accel X	Fwd	401.20046	+	OK	Entran	EGE-73B6Q-200
0012	02A18-N12	CSTYG1	Chest Accel Y	Lft	402.78171	-	OK	Entran	EGE-73B6Q-200
0013	B02A25-N10	CSTZG1	Chest Accel Z	Up	400.45363	-	OK	Entran	EGE-73B6Q-200
0014	14CB1-2897-135	CSTXD1	Chest Deflection X	Strum	119.78779	+	OK	Servo	14CB1-2897
0015	2430-739	LPMZF1	Left Femur Force Z	Knee	20067.530	+	OK	GSE	2430
0016	2430-760	RTMZF1	Right Femur Force Z	Knee	20036.559	+	OK	GSE	2430
0017	P178D7	HEADXG2	Head Accel X	Rr	804.08323	-	OK	Endevco	7264C-2KLC-2-
0018	P17559	HEADYG2	Head Accel Y	Lft	806.90025	-	OK	Endevco	7264C-2KLC-2-
0019	P15856	HEADZG2	Head Accel Z	Up	791.05123	-	OK	Endevco	7264C-2KLC-2-
0020	1F-205-287-FX	NEKXF2	Neck Force X	Hd	13369.237	-	OK	FTSS	IF-205
0021	1F-205-287-FY	NEKYF2	Neck Force Y	Hd	13366.046	+	OK	FTSS	IF-205
0022	1F-205-287-FZ	NEKZF2	Neck Force Z	Hd	20078.327	+	OK	FTSS	IF-205
0023	1F-205-287-MX	NEKXM2	Neck Moment X	Rt Ear	425.62243	-	OK	FTSS	IF-205
0024	1F-205-287-MY	NEKYM2	Neck Moment Y	Chin	425.09715	+	OK	FTSS	IF-205
0025	1F-205-287-MZ	NEKZM2	Neck Moment Z	Chin	423.84105	+	OK	FTSS	IF-205
0026	P16194	CSTXG2	Chest Accel X	Fwd	400.57338	+	OK	Endevco	7264C-2KLC-2-
0027	P16517	CSTYG2	Chest Accel Y	Lft	399.70334	-	OK	Endevco	7264C-2KLC-2-
0028	P16428	CSTZG2	Chest Accel Z	Up	399.75346	-	OK	Endevco	7264C-2KLC-2-
0029	14CB1-2897-139	CSTXD2	Chest Deflection X	Strum	118.96214	+	OK	Servo	14CB1-2897
0030	2121-0257	LPMZF2	Left Femur Force Z	Knee	20029.759	+	OK	Denton	2121

Channel Report

11/14/2002 8:06:53 AM

0031	2121-0258	RPMZF 2	Right Femur Force Z #12	Knee	20026.718	N	11/16/2002	OK	-426v	Denton	2121
0032	131779	LSXXG	LEFT REAR SEAT	PWD	977.13653	E	11/10/28/2002	OK	-1	Undevco	7264-200017

Channel Report

11/14/2002 8:06:53 AM

Name of Test		021114		System		MINIDAU		Name of DAU		DAUF	
Chan.#	Sensor #	Minimnnte	Description	Dir.	Range	Pol. Cal.	Group	Mfg.	Model		
00001	A8511	LSXYG	LEFT REAR SEAT	RT	1001.2515	+	6/19/2002	Endevco	7264-2000TZ		
00002	J15067	RSXXG	RIGHT REAR SEAT	FWD	995.95395	+	11/5/2002	Endevco	7264-2000T		
00003	J10451	RSXYG	RIGHT REAR SEAT	RT	1025.0045	-	11/5/2002	Endevco	7264-2000TZ		
00004	J36226	TENXG	TOP OF ENGINE X-AXIS	FWD	1500.5531	-	9/10/2002	Endevco	7264-2000TZ		
00005	ACC049	BENXG	BOTTOM OF ENGINE X-AXIS	FWD	1498.1273	+	5/23/2002	Endevco	7264-2000TZ		
00006	J11642	RFCXG	RIGHT FRONT BRAKE	FWD	1075.0045	+	11/5/2002	Endevco	7264-2000T		
00007	J53701	L/CXG	LEFT FRONT BRAKE	RR	1013.7007	-	10/31/2002	Endevco	7264-2000TZ		
00008	J41082	DPCXG	INSTRUMENT PANEL TOP	RR	1000.1562	-	10/30/2002	Endevco	7264-2000TZ		
00009	A1598	RDKZG	REAR DECK Z-AXIS	UP	994.36783	-	11/5/2002	Endevco	7264-2000T		

Shunt Measurement after Test

Name of Test 021114

2002-11-14 16:24:13

Name of	Name of	Channel	Shunt 1			Shunt 2 (-)			Shunt 3 (+) [K3600 only:]			Shunt 4 (-) [K3600 only:]		
			Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang
DAUA	EVENT	0001												
DAUA	02102116-A13	0002	3.000	3.167	Yes									
DAUA	02102116-A08	0003	3.000	3.165	Yes									
DAUA	02102116-A18	0004	3.000	3.170	Yes									
DAUA	IF-205-180-FX	0005	3.700	3.714	No									
DAUA	IF-205-180-FY	0006	3.700	3.710	No									
DAUA	IF-205-180-FZ	0007	3.700	3.679	No									
DAUA	IF-205-180-M	0008	3.700	3.721	No									
DAUA	X													
DAUA	IF-205-180-M	0009	3.700	3.710	No									
DAUA	Y													
DAUA	IF-205-180-M	0010	3.700	3.667	No									
DAUA	Z													
DAUA	B02A25-ND3	0011	3.000	3.161	Yes									
DAUA	02A18-N12	0012	3.000	3.164	Yes									
DAUA	B02A25-N10	0013	3.000	3.168	Yes									
DAUA	14C131-2897-1	0014	3.000	3.365	Yes									
DAUA	355													
DAUA	2430-739	0015	3.700	3.735	No									
DAUA	2430-760	0016	3.700	3.719	No									
DAUA	P17837	0017	3.000	3.147	Yes									
DAUA	P17559	0018	3.000	3.166	Yes									
DAUA	P15856	0019	3.000	3.145	Yes									
DAUA	IF-205-287-FX	0020	3.700	3.707	No									
DAUA	IF-205-287-FY	0021	3.700	3.719	No									
DAUA	IF-205-287-FZ	0022	3.700	3.675	No									
DAUA	IF-205-287-M	0023	3.700	3.712	No									
DAUA	X													
DAUA	IF-205-287-M	0024	3.700	3.716	No									
DAUA	Y													

Name of	Name of	Channel	Shunt 1			Shunt 2 (-)			Shunt 3 (-) [K3600 only:]			Shunt 4 (-) [K3600 only:]		
			Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang
DAUA	11-2015-287-M Z	0025	3.700	3.662	No									
DAUA	P16194	0026	3.000	3.154	Yes									
DAUA	P16517	0027	3.000	3.142	Yes									
DAUA	P16128	0028	3.000	3.145	Yes									
DAUA	14CB1-2897-1 392	0029	5.000	3.173	Yes									
DAUA	2.21-0257	0030	3.700	3.683	No									
DAUA	2.21-0258	0031	3.700	3.695	No									
DAUA	131779	0032	3.000	3.078	Yes									
DAUB	A85JJ	0001	3.000	2.782	Yes									
DAUB	J15067	0002	3.000	2.702	Yes									
DAUB	110454	0003	3.000	2.688	Yes									
DAUB	136226	0004	3.000	2.315	Yes									
DAUB	ACCM9	0005	3.000	2.410	Yes									
DAUB	111642	0006	3.000	2.807	Yes									
DAUB	135701	0007	3.000	2.750	Yes									
DAUB	J41082	0008	3.000	2.860	Yes									
DAUB	A1598	0009	3.000	2.826	Yes									

Shunt Measurement before Test

Name of Test 02114

2002-11-11 15:53:20

DAU	Sensor	Channel	Shunt 1 (+)			Shunt 2 (-)			Shunt 3 (+) [K3600 only]			Shunt 4 (-) [K3600 only]		
			Reference Voltage /	Shunt Value /	Out Rang	Reference Voltage /	Shunt Value /	Out Rang	Reference Voltage /	Shunt Value /	Out Rang	Reference Voltage /	Shunt Value /	Out Rang
DAUA	EVENT	0001												
DAUA	02102116-A13	0002	3.000	3.169	Yes									
DAUA	02102116-A08	0003	3.000	3.167	Yes									
DAUA	02102116-A18	0004	3.000	3.171	Yes									
DAUA	IF-205-180-FX	0005	3.700	3.714	No									
DAUA	IF-205-180-FY	0006	3.700	3.711	No									
DAUA	IF-205-180-FZ	0007	3.700	3.679	No									
DAUA	IF-205-180-M	0008	3.700	3.721	No									
DAUA	X													
DAUA	IF-205-180-M	0009	3.700	3.710	No									
DAUA	Y													
DAUA	IF-205-180-M	0010	3.700	3.667	No									
DAUA	Z													
DAUA	B02A25-N03	0011	3.000	3.162	Yes									
DAUA	02A18-N12	0012	3.000	3.163	Yes									
DAUA	B02A23-N10	0013	3.000	3.166	Yes									
DAUA	14CB1-2897-E	0014	5.400	3.339	Yes									
DAUA	355													
DAUA	2430-739	0015	3.700	3.735	No									
DAUA	2430-760	0016	3.700	3.719	No									
DAUA	P17837	0017	3.000	3.148	Yes									
DAUA	P17559	0018	3.000	3.163	Yes									
DAUA	P15856	0019	3.000	3.145	Yes									
DAUA	IF-205-287-FX	0020	3.700	3.706	No									
DAUA	IF-205-287-FY	0021	3.700	3.719	No									
DAUA	IF-205-287-FZ	0022	3.700	3.674	No									
DAUA	IF-205-287-M	0023	3.700	3.712	No									
DAUA	X													
DAUA	IF-205-287-M	0024	3.700	3.716	No									
DAUA	Y													

DAL	Sensor	Chanre	Shunt 1 (+)		Shunt 2 (-)		Shunt 3 (-) K3600 only		Shunt 4 (-) K3600 only	
			Reference Voltage /	Shunt Value /	Out Rang	Reference Voltage /	Shunt Value /	Out Rang	Reference Voltage /	Shunt Value /
DAUA	1F-205-287-M	0025	3.700	3.662	No					
	Z									
DAUA	P16194	0026	3.000	3.156	Yes					
DAUA	P16317	0027	3.000	3.143	Yes					
DAUA	P16428	0028	3.000	3.146	Yes					
DAUA	14CT31-2897-1	0029	5.000	3.168	Yes					
	392									
DAUA	2121-0257	0030	3.700	3.683	No					
DAUA	2121-0258	0031	3.700	3.695	No					
DAUA	131779	0032	3.000	3.084	Yes					
DAUB	A8511	0001	3.000	2.787	Yes					
DAUB	J15067	0002	3.000	2.703	Yes					
DAUB	J10454	0003	3.000	2.690	Yes					
DAUB	J36226	0004	3.000	3.320	Yes					
DAUB	ACCM9	0005	3.000	2.414	Yes					
DAUB	J11642	0006	3.000	2.817	Yes					
DAUB	J33701	0007	3.000	2.754	Yes					
DAUB	J41082	0008	3.000	2.874	Yes					
DAUB	AJ598	0009	3.000	2.841	Yes					